INVASION DUST . . . by Don Wilcox

See BACK COVER

AMAZING STORIES

DECEMBER
25¢
IN CANADA 30¢

UNDERSEA GUARDIANS

By RAY BRADBURY

OH, YEAH! A MONTH'S PAY SAYS IT WILL!

Me and Buck were having an argument about them flakes and scales on my jumper. "Listen," says he, "I'm laying my month's pay that if you'll take my advice, you'll get help—pronto!"

I took the bet.

"For all the tea in China," Buck says, "you've got infectious dandruff—germs—lots of 'em! And to fight bugs like 'bottle bacillus' you need antiseptic action—and massage!".

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Listerine Antiseptic and massage really got after those flakes and scales, eased up that itching. The old scalp and hair felt like a million—looked swell! Glad I lost that bet! Buck took the dough and we made liberty together. Good guy, Buck!

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This is the treatment that doesn't fool : : : that has helped thousands. Listerine Antiseptic is the same antiseptic that has been famous for more than 60 years in the field of oral hygiene.

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J. E. SMITH, President
National Radio Institute
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Today there's a shortage of capable Radio Technicians and Operators. The Radio Repair business is booming. Profits are large. After-the-war prospects are bright too. Think of the *new* boom in Radio Sales and Servicing that's coming when new Radios are again available — when Frequency Modulation and Electronics can be promoted — when Television starts its postwar expansion!

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VOLUME 18
NUMBER 5

ZIFF-DAVIS PUBLISHING COMPANY

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The Jap held Truk—but they didn't know what lay beneath their fortified island . . . in Lemuria!

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1944

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Front cover painting by James B. Settles, illustrating a scene from "Undersea Guardians." Back cover painting by James B. Settles depicting the "Super Train of Tomorrow."

Twelve thousand years ago the Lemurians and Atlanteans disappeared from the Earth. Where and why did they go?

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Richard S. Shaver

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AMAZING STORIES DECEMBER 1944

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Volume 18 Number 5

The OBSERVATORY ..... by the Editor

OUR last issue was a special one, entirely soldier-written. It went over so well with you readers that we still have little tingles of gratification running up and down our spines. So, casting around anxiously for something to run this issue to keep up the good work, we conceived the idea of grouping all of our available "war" background stories in a special "war-science-fiction" issue! When we had grouped them all together, we found ourselves staring with admiration at the contents page copy. If there isn't some real class there, we'll eat a copy of the issue in Times Square.

RUN your eyes down that list: Ray Bradbury; Don Wilcox; Emil Petaja; Stanton A. Coblentz; Cpl. Donald Bern; Berkeley Livingston (to mention the names of frequent and popular contributors)—and Helmar Lewis; Lester Barclay; C. A. Baldwin; George Tashman (to mention others more or less new to our pages but certainly not new to the writing game).

WE WON'T bore you with comments on their stories this issue—we have more significant things to talk about—but we will point out that Cpl. Donald Bern wrote his "The Map Of Fate" in New Guinea, with Jap bullets whistling around his ears! And the story is authentic, because the duties of the main character are also Donald Bern's duties.

PROPHECY has always been a portion of this column; and now we have a little that might be listed as the work of Calamity Jane, or of Poe's raven, but we think it ought to be given a little thought. You all know how tremendous a weapon the flying rocket bomb is, and we scarcely need point out that today it is in the same infant stage that aviation was in the last war. Picture for yourself this prophetic vision of the third world war!

GIANT rockets, weighing a hundred tons or more, loaded with tremendously powerful explosives; others with horrible poison gases; still more with terrifically potent incendiary substances. Their range anywhere up to 5,000 miles. Their accuracy so controlled that they can pinpoint a target. Now picture yourself in Chicago. You are the center of a circle 10,000 miles in diameter. From anywhere in that circle you can be utterly destroyed in a matter of hours by an attack whose origination point you will be unable to determine, because of the maneuverability of the rockets. Science fiction, you say? No! This weapon is now a reality. It has been invented! It is still an infant, but it will grow. There is only one answer: we must make sure now that no factions desiring world conquest are allowed the opportunity to develop this weapon to the *attacking* point—no matter where on this globe it may be! You, the readers, are the heirs of Earth's future. You know perhaps better than anyone else that the picture we have painted is more than just fiction, fantasy, imagination. It's going to be placed in your hands . . . so take a little time to think about it seriously, and when there's something you see that must be done about it—do it!

SO MUCH for the future. Now we come to something more intriguing to your editor, at the moment, and, we predict, to you. No doubt you've read our comments in past months about a mysterious "true story of Lemuria"? And no doubt you've seen by our contents page that this story is scheduled for our next issue? So let's go into the past for a few minutes.

SOME nine months ago we published a letter in *Discussions* concerning the alphabet of an ancient language, reputedly that of Lemuria. Mr. Richard S. Shaver, who lives in Pennsylvania, wrote us very seriously about it, and after we had rather haphazardly tested it phonetically on a number of root words, we decided to publish it to get the readers' reactions to it. The result was a bit startling. Not only did the alphabet work when applied to root words in the English language, it worked to an incredible degree in as many as thirteen different languages! In fact, in all languages tested. What did we have here?

MR. SHAVER wrote us more letters, some of them vastly disturbing to us because they knocked some big holes in what we thought was truth when we learned it in college. We couldn't accept them, not because we didn't think they didn't have rhyme or reason, but because we don't accept things without checking them, and proving them. As with the language, we made several minor tests. The results? Well, we might just as

(Concluded on page 8)

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The OBSERVATORY by the Editor

(Concluded from page 6)

well have gone fishing instead of to college! Now we've got to start from the bottom and learn all over again what makes the universe tick—insofar as we (or science) know about it to start with.

SOME weeks later Mr. Shaver sent us the manuscript you will read in our March issue.

THAT, readers, is a paragraph in itself! When you have read the story "I Remember Lemuria!" you'll say so too. Frankly, the manuscript as you will read it is not the manuscript originally submitted. It is a re-write resulting from *more than one million words* of further correspondence with Mr. Shaver; months of intense work on research; many painful hours of checking details, of digging out corroborative footnote material.

AT OUR suggestion Mr. Shaver began the compilation of words in the English language which have come down over 12,000 years from the mother tongue of Lemuria (or to give it its name, Mantong—meaning the language of man). On our desk at the present moment is a first draft of a dictionary of these numbering perhaps 400 words. We will publish a condensation of this dictionary in connection with the story "I Remember Lemuria" in order to give our readers a better key to the fundamentals of the language than was possible by the skimpy, meagre, incomplete alphabetical definitions we originally published. By using this new key, we hope that many of our readers will conduct further research into root words, including in the scope of research languages other than English, and thereby add to the dictionary's total volume. We have a definite feeling that vast possibilities for uncovering many of the mysteries of the past, and of lost sciences, exists in further research into this incredible mother tongue of all Earth languages.

WHEN you read "I Remember Lemuria" you will also find outlined in very brief form a new (or we should say, *old*) theory of gravity; a new concept of matter; and a new foundation for physical mathematics. Needless to say, you will *not* read a great deal about it, because some exhaustive work is being done along constructive and serious lines entirely apart from the interest of AMAZING STORIES and its readers, whose desire first and foremost is to provide and indulge in entertainment. What you *will* get from this story, and others to follow even more ambitious in scope, is the most magnificent entertainment you have ever enjoyed in our pages! Apart from the amazing factors surrounding Mr. Shaver and his manuscripts, he is a writer of intensely vital ability. He has written his story with a very conscious effort to be entertaining. He has interlarded his memories with enough fiction to make for absorbing reading—and at the same time, he has not, by any detail, destroyed the accuracy of the picture of the past he is portraying. That is the one thing we have discovered in long months of correspondence—Mr. Shaver is sincere, he has no interest more vital than to convey the truth that lies within his mind and his incredible memory (or whatever it is) concerning the vast mystery of Lemuria!

THE March, 1945 issue of AMAZING STORIES containing "I Remember Lemuria" is scheduled to go on sale on December 8. Don't miss it! And if you want to make sure you get a copy, reserve it now; or better still, reserve one with our subscription department. *Each issue, until further notice,* will carry one of Mr. Shaver's incredible manuscripts. You'd be smart to subscribe, what with paper conditions what they are.

WILLIAM P. McGIVERN writes from England where he is stationed, "You will be getting a manuscript from me one of these days; liquor here is sold at an ungodly price, far beyond the pay of a lowly sergeant." Which is certainly typical of the big lad! When he gets back we'll buy him the best bottle of scotch in town!

YOUR editor has a brother in the service (8 years in the army infantry!) who has the same trouble. His last letter, written from France, said simply that he'd "heard there was still some good liquor in Paris, and he was getting damned thirsty." It seems to be true that the general attitude of the American soldier these days is "let's finish this thing now, and go home!" Such spirit as this accounts for the headaches the Germans and Japs are experiencing these days.

THOSE secret weapons which have been no secret in AMAZING STORIES for 18 years, are beginning to pop up as this war draws to its end. The Japs were recently treated to one, or two if you want to count the B-29; and the Germans have certainly brought one up with the rocket bomb. We're seriously thinking of a kind of fiction to take the place of Amazing's "science fictin," which is now becoming anything but amazing!

IF YOU are wondering what became of the sequel to "The Vengeance Of Martin Brand" we have shelved it in favor of the sensational Shaver manuscript. But we assure you we won't shelve it for long.

IT SURE will be swell when we can have all the paper we want again, won't it? We've got so many fine stories waiting to see print that we're beginning to see 'em stacked in our dreams! *Rap*

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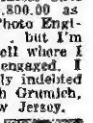

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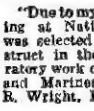

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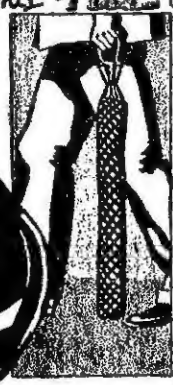

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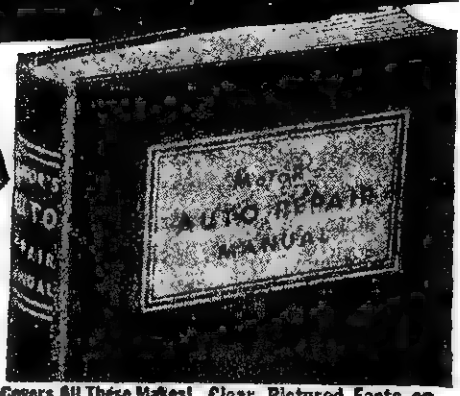

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UNDERSEA GUARDIANS

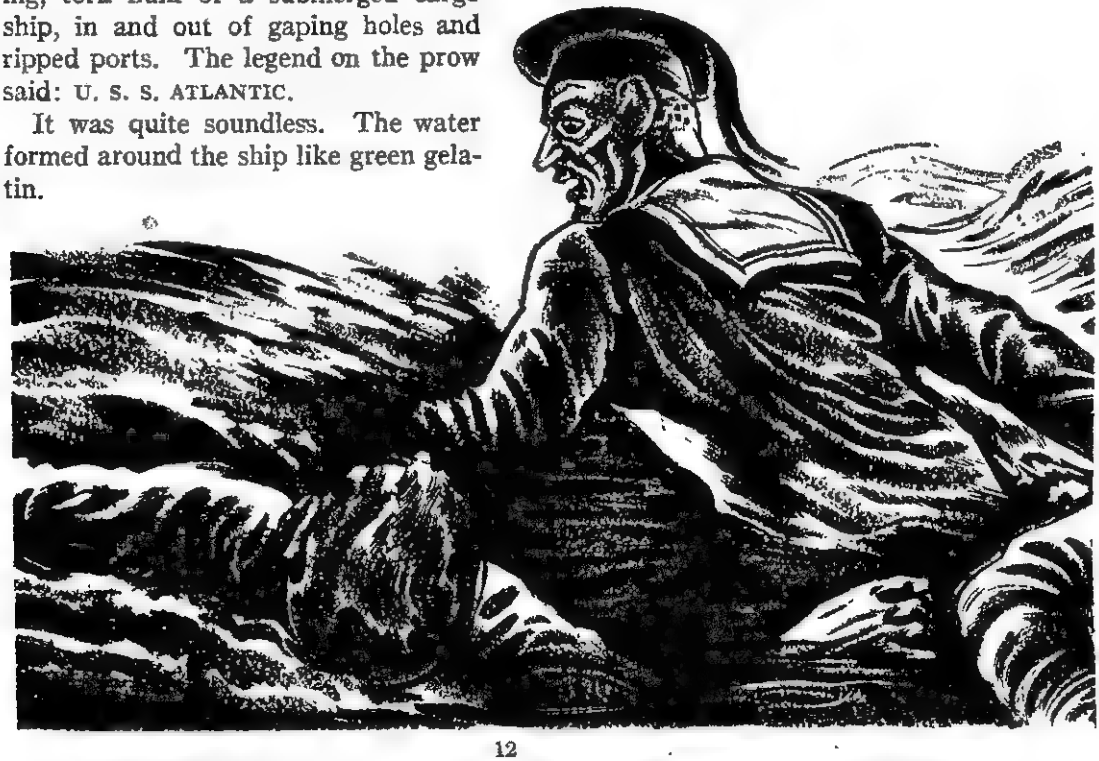
By RAY BRADBURY

ALL of us have a purpose in life; among us are those whose duty is to act as guardians for those who have a mission to perform

THE ocean slept quietly. There was little movement in its deep green silence. Along the floor of a watery valley some bright flecks of orange color swam: tiny arrow-shaped fish. A shark prowled by, gaping its mouth. An octopus reached up lazily with a tentacle, wiggled it at nothing, and settled back dark and quiet.

Fish swam in and around the rusting, torn hulk of a submerged cargo ship, in and out of gaping holes and ripped ports. The legend on the prow said: U. S. S. ATLANTIC.

It was quite soundless. The water formed around the ship like green gelatin.



"She's alive! God save us—she's living!"

And then Conda came, with his recruits.

They were swimming like dream-motes through the wide dark-watered valleys of the ocean; Conda at the head of the school with his red shock of hair flurried upright in a current, and his red bush beard trailed down over the massive rib of his chest. He put out his great arms, clutched water, pulled back, and his long body shot ahead.

The others imitated Conda, and it was very quietly done. The ripple of white arms, cupped hands, the glimmer of quick moving feet, was like the movement of motion pictures from which the sound-track has been cut. Just deep water silence and the mute moves of Conda and his swarm.

Alita came close at his kicking heels. She swam with her sea-green eyes wide-fixed and her dark hair spilling back over her naked body. Her mouth twisted with some sort of agony to which she could give no words.

Alita felt someone moving at her side. Another, smaller, woman, very thin in her nakedness, with gray hair and a shriveled husk of face that held nothing but weariness. She swam too, and would keep on swimming.

And then there was Helene, flashing by over their heads like an instantaneous charge of lightning. Helene with her hot angry eyes and her long platinum hair and her strange laughter.

"How much longer, Conda?" The old woman's thought reached through the waters, touching the brains of them all as they swam.

"An hour. Perhaps only forty minutes!" came Conda's blunt retort. It had the depth of fathoms in it; dark like the tides in the sunken water lands.

"Watch out!" somebody cried.

Down through the green waters overhead something tumbled. A shadow crossed the ocean surface, quick, like a gigantic sea-gull.

"Depth-charge!" shouted Conda. "Get away from it!"

Like so many frightened fish the twenty of them scattered instantly, with a flurry of legs, a spreading of arms, a diving of heads.

THE depth-charge ripped water into gouts and shreds, spread terrific vibrations down to kick the sandy bottom, up to ram the surface like a geyser!

Alita screamed to herself as she sank, stunned, to the sea-floor, a queer strange pain going through her limbs. If only this were over, if only the real death came. If only it were over.

A shivering went through her. Quite suddenly the water was icy cold, and she was alone in the green emptiness. So very alone. Alone, staring at a dark ring on her left hand.

"Richard, I want to see you again so very much. Oh, Richard, if we could only be together."

"Daughter." The gentle thought husked at her as the old woman glided up, white hair misting around her wrinkled face. "Don't. Don't think. Come along. There's work. Work to be done. Much of it. Work for you and me and the ships on the surface, and for—for Richard."

Alita didn't move. "I don't want to swim. I'd rather just sit here on the sand and . . . wait."

"You know you can't do that." The old woman touched her. "You'd be all the unhappier. You have a reason to swim or you wouldn't be swimming. Come along. We're almost there!"

The effects of the depth-charge, dropped from a low-flying airplane, had dispersed. Mud-streaks boiled up fogging the water, and there were a million air bubbles dancing toward the

outer world like laughing diamonds. Alita let the old woman take her hand and tug her up from the sand floor. Together they progressed toward Conda, who was the nucleus of a growing congregation.

"Submarine!" somebody thought, in a tense whisper. "Over that crop of coral ahead. That's why the airplane dropped the depth-charge!"

"What kind of submarine?" someone else asked.

"German," said Conda grimly. His red beard wavered in the water and his red-rimmed eyes stared out with iron fury. Helene flicked by them all, swiftly, laughing. "A German submarine lying on the bottom, sleeping quietly—waiting for the *convoy!*"

Their minds swirled at the words of Conda, like so many warm-cold currents intermixing with fear and apprehension.

"And the convoy will pass this spot in how long?"

"Half an hour at most, now."

"Then there isn't much time, is there?"

"Not much."

"Isn't it dangerous for us to be near it? What if the airplane returns with more depth-charges?"

Conda growled. "This is the limit to the plane range. That plane won't be back. He's out of bombs and out of gas. It's our job now. And what of it? You afraid?"

Silence.

THE ring of faces looked to Conda for the plan, Alita among them; fourteen men, six women. Men with beards grown out four, five months; hair long and unshorn about their ears. Pallid watery faces with determined bone under the skin, set jaws and tightened fists. All gathered like fragments of some oceanic nightmare. The pallid undead, breathing water, and thinking mute thoughts about the stormy night when the U. S. S. ATLANTIC had been torpedoed and sent to the bottom, with all of them trapped, screaming, inside her.

"We never had our chance," said Conda, grimly, "to get where we were going to do what we had to do. But we'll go on doing it until the war's over because that's all that's worth while doing. I don't know how we live or what makes us live except the will to fight, the will to vengeance, wanting to win—not wanting to lie on he coral shelves like so much meat for the sharks——"

Alita listened and shuddered. Why was she still alive and swimming forty fathoms under?

And then she knew. It was like sudden flame in her. She lived because she loved Richard Jameson. She lived simply because his ship might pass this way some day soon again, like it had three weeks ago, returning from England. And she might see him leaning on the rail, smoking his pipe and trying to smile, still alive.

She lived for that. She lived to keep him safe on every trip. Like the others, she had a purpose, a hot, constricting, unquenchable purpose to prevent more victims from coming down to join her in the same nightmare fashion as the U. S. S. ATLANTIC. She guessed that explained everything. There was good reason for her still to be moving, and somehow God had motivated them all in the green sea-weed plateaus and gullies.

"Now," came Conda's heavy thought, "we've this German submarine to consider. We have to knock it out of action completely. We can't have it lying here when the convoy comes. Alita ——"

Alita jerked. She came out of her

thoughts, and her pale lips moved. "Yes?"

"You know what to do, Alita? And . . . Helene?"

Helene drifted down dreamily, laughing in answer, and opening white fingers to clench them tight.

"It's up to you, Alita and Helene. The rest of us will deploy around the submarine. Jones, you and Merrith try to jam the torpedo openings somehow. Acton, you work on the induction valves. Simpson, see what you can do to the guns on deck; and Haines, you and the other men try your damnedest with the periscope and conning tower."

"Yes, sir."

"Good enough, sir."

"If we do it, this'll be the sixth sub for us——"

"*If* we do it," said Conda.

"Alita'll do it for us, won't you, Alita?"

"What? Oh, yes. Yes! I'll do it." She tried to smile.

"All right then." Conda swung about. "Spread out and go in toward the submarine under a smoke-screen. Deploy!"

SILENTLY the congregation split into twos and threes and swam toward the coral shelf, around it, then sank to the bottom, scooped up great handfuls of mud and darkened the water with it. Alita followed, cold, tired, unhappy.

The submarine squatted on the bottom like a metal shark, dark and wary and not making a sound. Sea-weed waved drowsy fronds around it, and several curious blue-fish eyed it and fluttered past. Sunshine slanted down through water, touching the gray bulk, making it look prehistoric, primeval.

A veil of mud sprang up as the cordon of Conda's people closed in around the U-boat. Through this veil their pasty white bodies twisted, naked and quick.

Alita's heart spasmed its cold grave-flesh inside her. It beat salt water through her arteries, it beat agony through her veins. There, just a few feet from her through the mud-veil, lay an iron-womb, and inside it grown-up children stirred, living. And out here in the cold deeps nothing lived but the fish.

Conda and Alita and the others didn't count.

The submarine, a metal womb, nurturing those men, keeping the choking, hungry waters from them. What a difference a few inches of metal made between pink flesh and her own white flesh, between living and not living, between laughing and crying. All of that *air* inside the submarine. What would it be like to gasp it in again, like the old days just a few scant weeks ago. What would it be like to suck it in and mouth it out with talked words on it? To *talk* again!

Alita grimaced. She kicked her legs. Plunging to the U-boat, she beat her fists against it, screaming, "Let me in! Let me in! I'm out here and I want to live! I want to live! Let me in!"

"Alita!" The old woman's voice cried in her mind. A shadow drew across her lined face, softening it. "No, no, my child, do not think of it! Think only of what must be done!"

Alita's handsome face was ugly with torture.

"Just one breath! Just one song!"

"Time shortens, Alita. And the convoy comes! The submarine must be smashed—now!"

"Yes," said Alita wearily. "Yes. I must think of Richard—if he should happen to be in this next convoy——" Her dark hair surged in her face. She brushed it back with white fingers and stopped thinking about living again. It

was needless torture.

She heard Helene's laughter from somewhere. It made her shiver. She saw Helene's nude body flash by above her like a silver fish, magnificent and graceful as a wind-borne thistle. Her laughter swam with her. "Open the U-boat up! Open it up and let them out and I'll make love to a German boy!"

THERE were lights in the submarine. Dim lights. Alita pressed her pale face against the port and stared into a crew's quarters. Two German men lay on small bunks, looking at the iron ceiling, doing nothing. After a while one puckered his lips, whistled, and rolled out of the bunk to disappear through a small iron door. Alita nodded. This was the way she wanted it. The other man was very young and very nervous, his eyes were erratic in a tired face, and his hair was corn-yellow and clipped tight to his head. He twisted his hands together, again and again, and a muscle in his cheek kept jerking.

Light and life, a matter of inches away. Alita felt the cold press of the ocean all around her, the beckoning urge of the cold swells. Oh, just to be inside, living and talking like them . . . .

She raised her tiny fist, the one with Richard's thick ring on it, from Annapolis, and struck at the port. She struck four times.

No effect.

She tried again, and knew that Helene would be doing the same on the opposite side of the sub.

The Annapolis ring clicked against thick port glass.

Jerking, the German lad pulled his head up half an inch and stared at the port, and looked away again, went back to twisting his fingers and wetting his lips with his tongue.

"I'm out here!" Alita struck again and again. "Listen to me! Listen! I'm out here!"

The German sat up so violently he cracked his head against metal. Holding his forehead with one hand he slipped out of the bunk and stepped to the port.

He squinted out, cupping hands over eyes to see better.

Alita smiled. She didn't feel like smiling, but she smiled. Sunlight sprang down upon her dark smoke-spirals of hair dancing on the water. Sunlight stroked her naked white body. She beckoned with her hands, laughing.

For one unbelieving, stricken instant, it was as if hands strangled the German lad. His eyes grew out from his face like unhealthy gray things. His mouth stopped retching and froze. Something crumbled inside him. It seemed to be the one last thing to strike his mind once and for all insane.

One moment there, the next he was gone. Alita watched him fling himself back from the port, screaming words she couldn't hear. Her heart pounded. He fought to the door, staggering out. She swam to the next port in time to see him shout into the midst of a sweating trio of mechanics. He stopped, swayed, swallowed, pointed back to the bunk room, and while the others turned to stare in the designated direction, the young German ran on, his mouth wide, to the entrance rungs of the conning tower.

Alita knew what he was yelling. She spoke little German; she heard nothing; but faintly the waves of his mind impinged on hers, a screaming insanity:

"God! Oh God! She's outside. And she is swimming! And alive!"

THE sub captain saw him coming. He dragged out a revolver and fired,

point-blank. The shot missed and the two grappled.

"God! Oh God! I can't stand it longer! Months of sleeping under the sea! Let me out of this god-damned nightmare! Let me out!"

"Stop! Stop it, Schmidt! Stop!"

The captain fell under a blow. The younger man wrested the gun from him, shot him three times. Then he jumped up the rungs to the conning tower, and twisted at mechanisms.

Alita warned the others. "Be ready! One is coming out! He's coming out! He's opening the inner door!"

Instantly, breathlessly, passionately, Helene's voice rang: "To hell with the inner door! It's the outer door we want open!"

"God in heaven, let me out! I can't stay below!"

"Stop him!"

The crew scrambled. Ringing down, the inner door peeled open. Three Germanic faces betrayed the biting fear in their bellies. They grabbed instruments and threw them at Schmidt's vanishing legs jumping up the rungs!

Conda's voice clashed like a thrust gong in the deep sunlit waters. "Ready, everyone? If he gets the outer door open, we must force in to stop the others from ever closing it!"

Helene laughed her knifing laughter. "I'm ready!"

The submarine stirred and rolled to a strange gurgling sound. Young Schmidt was babbling and crying. To Alita, he was now out of sight. The other men were pouring pistol shots up into the conning tower where he'd vanished, to no effect. They climbed after him, shouting.

A gout of water hammered down, crushed them!

"It's open!" Helene exulted. "It's open! The outer seal is free!"

"Don't let them slam it again!" roared Conda. White bodies shot by, flashing green in the sunlight. Thoughts darkened, veiling like unsettled mud.

Inside the machine-room, the crew staggered in a sloshing, belching nightmare of thrusting water. There was churning and thrashing and shaking like the interior of a gigantic washing machine. Two or three crew-men struggled up the rungs to the inner lock and beat at the closing mechanism.

"I'm inside!" Helene's voice was high, excited. "I've got him—the German boy! Oh, this is a new kind of love, this is!"

There was a terrific mental scream from the German, and then silence. A moment later his dangling legs appeared half in, half out the lock as the door started to seal! Now it couldn't seal. Yanking desperately, the crew beneath tried to free him of the lock, but Helene laughed dimly and said, "Oh, no, I've got him and I'm keeping him here where he'll do the most good! He's mine. Very much mine. You can't have him back!"

Water thundered, spewed. The Germans floundered. Schmidt's limbs kicked wildly, with no life, in the steadily descending torrent. Something happened to release him. The lock rapped open and he fell face down into the rising waters.

Something came with him. Something white and quick and naked. Helene.

ALITA watched in a numbed sort of feeling that was too weary to be horror.

She watched until there were three Germans left, swimming about, keeping their heads over water, yelling to God to save them. And Helene was in among them, invisible and stroking and moving quickly. Her white hands flickered up, grasped one officer by the

shoulders and pulled him steadily under.

"This is a different kind of love! Make love to me! Make love! Don't you like my cold lips?"

Alita swam off, shuddering, away from the fury and yelling and corruption. The submarine was dying, shaking its prehistoric bulk with metal agony. In another moment it would be drowned and the job done. Silence would come down again and sunlight would strike on the dead, quiet U-boat and another attack would be successful.

Sobbing, Alita swam up toward the sun in the green silence. It was late afternoon, and the water became warmer as she neared the surface. Late afternoon. Back in Forest Hills they'd be playing tennis now on the hot courts, drinking cool cocktails, talking about dancing tonight at the Indigo Club. Back in Forest Hills they'd be deciding what formal to wear tonight to that dance, what show to see. Oh, that was so long ago in the sanity of living, in the time before torpedoes crushed the hull of the U. S. S. ATLANTIC and took her down.

Richard, where are you now? Will you be here in a few minutes, Richard, with the convoy? Will you be thinking of us and the day we kissed goodbye in New York at the harbor, when I was on my way to nursing service in London? Will you remember how we kissed and held tight, and how you never saw me again?

I saw *you*, Richard. Three weeks ago. When you passed by on Destroyer 242, oblivious to me floating a few feet under the water!

If only we could be together. But I wouldn't want you to be like this, white and sodden and not alive. I want to keep you from all this, darling. And I shall. That's why I stay moving, I guess. Because I know I can help keep you living. We just killed a submarine, Richard. It won't have a chance to harm you. You'll have a chance to go to Britain, to do the things *we* wanted to do *together*.

There was a gentle movement in the water, and the old woman was at her side.

Alita's white shoulders jerked. "It —it was awful."

The old woman looked at the sun caught in the liquid. "It always is— this kind of death. It always has been —always will be as long as men are at war. We had to do it. We didn't take lives, we saved lives — hundreds of them."

Alita closed her eyes and opened them again. "I've been wondering about us. Why is it that just you and I and Conda and Helene and a few others survived the sinking Why didn't some of the hundreds of others join us? What are we?"

The old woman moved her feet slowly, rippling currents.

"We're Guardians, that's what you'd call us. A thousand people drowned when the ATLANTIC went down, but twenty of us came out, half-dead, because we have somebody to guard. You have a lover on the convoy routes. I have four sons in the Navy. The others have similar obligations. Conda has sons too. And Helene—well, her lover was drowned inside the ATLANTIC and never came half-alive like us, so she's vindictive, motivated by a great vengeance. She can't ever really be killed.

"We all have a stake in the convoys that cross and recross the ocean. We're not the only ones. Maybe there are thousands of others who cannot and will not rest between here and England, breaking seams in German cargo boats, darkening Nazi periscopes and frightening German crewmen, sinking

their gun-boats when the chance comes.

"But we're all the same. Our love for our husbands and sons and daughters and fathers makes us go on when we should be meat for fish, makes us go on being Guardians of the Convoy, gives us the ability to swim faster than any human ever swam while living, as fast as any fish ever swam. Invisible guardians nobody'll ever know about or appreciate. Our urge to do our bit was so great we wouldn't let dying put us out of action. . . ."

"I'm so tired, though," said Alita. "So very tired."

"When the war is over—we'll rest. In the meanwhile——"

"The convoy is coming!"

IT WAS Conda's deep, voice of authority. Used to giving captain's orders for years aboard the ATLANTIC, he appeared below them now, about a hundred yards away, striving up in the watered sunlight, his red hair aflame around his big-nosed, thick-lipped face. His beard was like so many living tentacles, writhing.

The convoy!

The Guardians stopped whatever they were doing and hung suspended like insects in some green primordial amber, listening to the deeps.

From far, far off it came: the voice of the convoy. First a dim note, a lazy drifting of sound, like trumpets blown into eternity and lost in the wind. A dim vibration of propellers beating water, a bulking of much weight on the sun-sparkled Atlantic tides.

The convoy!

Destroyers, cruisers, corvettes, and cargo ships. The great bulking convoy!

Richard! Richard! Are *you* with them?

Alita breathed water in her nostrils, down her throat, in her lungs. She hung like a pearl against a green velvet gown that rose and fell under the breathing of the sea.

Richard!

The echo of ships became more than a suggestion. The water began to hum and dance and tremble with the advancing armada. Bearing munitions and food and planes, bearing hopes and prayers and people, the convoy churned for England.

Richard Jameson!

The ships would come by like so many heavy blue shadows over their heads and pass on and be lost soon in the night-time, and tomorrow there would be another and another stream of them.

Alita would swim with them for a way. Until she was tired of swimming, perhaps, and then she'd drop down, come floating back here to this spot on a deep water tide she knew and utilized for the purpose.

Now, excitedly, she shot upward.

She went as near to the surface as she could, hearing Conda's thunder-voice giving commands:

"Spread out! One of you to each major ship! Report any hostile activity to me instantly! We'll trail with them until after sunset! Spread!"

The others obeyed, rising to position, ready. Not near enough to the surface so the sun could get at their flesh.

They waited. The hammer-hammer churn-churn of ships folded and grew upon itself. The sea brimmed with its bellow going down to kick the sand and striking up in reflected quivers of sound. Hammer-hammer-churn!

Richard Jameson!

Alita dared raise her head above water. The sun hit her like a dull hammer. Her eyes flicked, searching, and as she sank down again she cried, "Richard. It's his ship. The first destroyer. I recognize the number. He's

here again!"

"Alita, please," cautioned the old woman. "Control yourself. *My* boy, too. He's on one of the cargo ships. I know its propeller voice well. I recognize the sound. One of my boys is here, near me. And it feels so very good."

The whole score of them swam to meet the convoy. Only Helene stayed behind. Swimming around and around the German U-boat, swimming swiftly and laughing her strange high laughter that wasn't sane.

Alita felt something like elation rising in her. It was good, just to be this close to Richard, even if she couldn't speak or show herself or kiss him ever again. She'd watch him every time he came by this way. Perhaps she'd swim all night, now, and part of the next day, until she couldn't keep up with him any longer, and then she'd whisper goodbye and let him sail on alone.

THE destroyer cut close to her. She saw its number on the prow in the sun. And the sea sprang aside as the destroyer cut it like a glittering knife.

There was a moment of exhilaration, and then Conda shouted it deep and loud and excited:

"SUBMARINE!"

"Submarine coming from north, cutting across convoy! German!"

Richard!

Alita's body twisted fearfully as she heard the under-water vibration that meant a submarine was coming in toward them, fast. A dark long shadow pulsed underwater.

There was nothing you could do to stop a moving submarine, unless you were lucky. You could try stopping it by jamming its propellers, but there wasn't time for that.

Conda yelled, "Close in on the sub! Try to stop it somehow! Block the periscope. Do anything!"

But the German U-boat gnashed in like a mercurial monster. In three breaths it was lined up with the convoy, unseen, and squaring off to release its torpedoes.

Down below, like some dim-moving fantasy, Helene swam in eccentric circles, but as the sub shadow trailed over her she snapped her face up, her hot eyes pulled wide and she launched herself with terrific energy up at it, her face blazing with fury!

The ships of the convoy moved on, all unaware of the poisoned waters they churned. Their great valvular hearts pounding, their screws thrashing a wild water song.

"Conda, do something! Conda!" Alita shivered as her mind thrust the thoughts out at the red-bearded giant. Conda moved like a magnificent shark up toward the propellers of the U-boat, swift and angry.

Squirting, bubbling, jolting, the sub expelled a child of force, a streamlined torpedo that kicked out of its metal womb, trailed by a second, launched with terrific impetus—at the destroyer.

Alita kicked with her feet. She grasped at the veils of water with helpless fingers, blew all the water from her lungs in a stifled scream.

Things happened swiftly. She had to swim at incredible speed just to keep pace with submarine and convoy. And —spinning a bubbled trail of web—the torpedoes coursed at the destroyer as Alita swam her frantic way.

"It missed! Both torps missed!" someone cried; it sounded like the old woman.

Oh, Richard, Richard, don't you know the sub is near you Don't let it bring you down to . . . *this*, Richard! Drop the depth charges! Drop them now!

Nothing.

Conda clung to the conning tower of the U-boat, cursing with elemental rage, striving uselessly.

Two more torpedoes issued from the mouths of the sub and went surging on their trajectories. Maybe——

"Missed again!"

Alita was gaining. Gaining. Getting closer to the destroyer. If only she could leap from the waters, shouting. If only she were something else but this dead white flesh. . . .

Another torpedo. The last one, probably, in the sub.

It was going to hit!

Alita knew that before she'd taken three strokes more. She swam exactly alongside the destroyer now, the submarine was many many yards ahead when it let loose its last explosive. She saw it come, shining like some new kind of fish, and she knew the range was correct this time.

In an instant she knew what there was to be done. In an instant she knew the whole purpose and destiny of her swimming and being only half-dead. It meant the end of swimming forever, now, the end of thinking about Richard and never having him for herself ever again. It meant——

She kicked her heels in the face of water, stroked ahead clean, quick. The torpedo came directly at her with its blunt, ugly nose.

Alita coasted, spread her arms wide, waited to embrace it, take it to her breast like a long-lost lover.

She shouted it in her mind:

"Helene! Helene! From now on—from now on—take care of Richard for me! Watch over him for me! Take care of Richard——!"

"Submarine off starboard!"

"Ready depth-charges!"

"Torpedo traces! Four of them! Missed us!"

"Here comes another one! They've got our range this time, Jameson! Watch it!"

To the men on the bridge it was the last moment before hell. Richard Jameson stood there with his teeth clenched, yelling, "Hard over!" but it was no use; that torp was coming on, not caring, not looking where it was going. It would hit them amidship! Jameson's face went white all over and he breathed something under his breath and clutched the rail.

The torpedo never reached the destroyer.

It exploded about one hundred feet from the destroyer's hull. Jameson fell to the deck, swearing. He waited. He staggered up moments later, helped by his junior officer.

"That was a close one, sir!"

"What happened?"

"That torp had our range, sir. But they must have put a faulty mechanism in her. She exploded short of her goal. Struck a submerged log or something."

Jameson stood there with salt spraying his face. "I thought I saw something just before the explosion. It looked like a . . . log. Yeah. That was it. A log."

"Lucky for us, eh, sir?"

"Yeah. Damn lucky."

"Depth-charge! Toss 'em!"

Depth-charges were dropped. Moments later a subwater explosion tore up the water. Oil bubbled up to color the waves, with bits of wreckage mixed in it.

"We got the sub," someone said.

"Yeah. And the sub almost got us!"

The destroyer ran in the wave channels, in the free wind, under a darkening sky.

"Full speed ahead!"

The ocean slept quiet as the convoy moved on in the twilight. There was little movement in its deep green silence. Except for some things that

may have been a swarm of silver fish gathered below, just under the waters where the convoy had passed; pale things, stirring, flashing a flash of white, and s w i m m i n g off silently, strangely, into the deep green soundlessness of the undersea valleys. . . .

The ocean slept again.

CHEMISTRY— THE ENEMY OF DISEASE

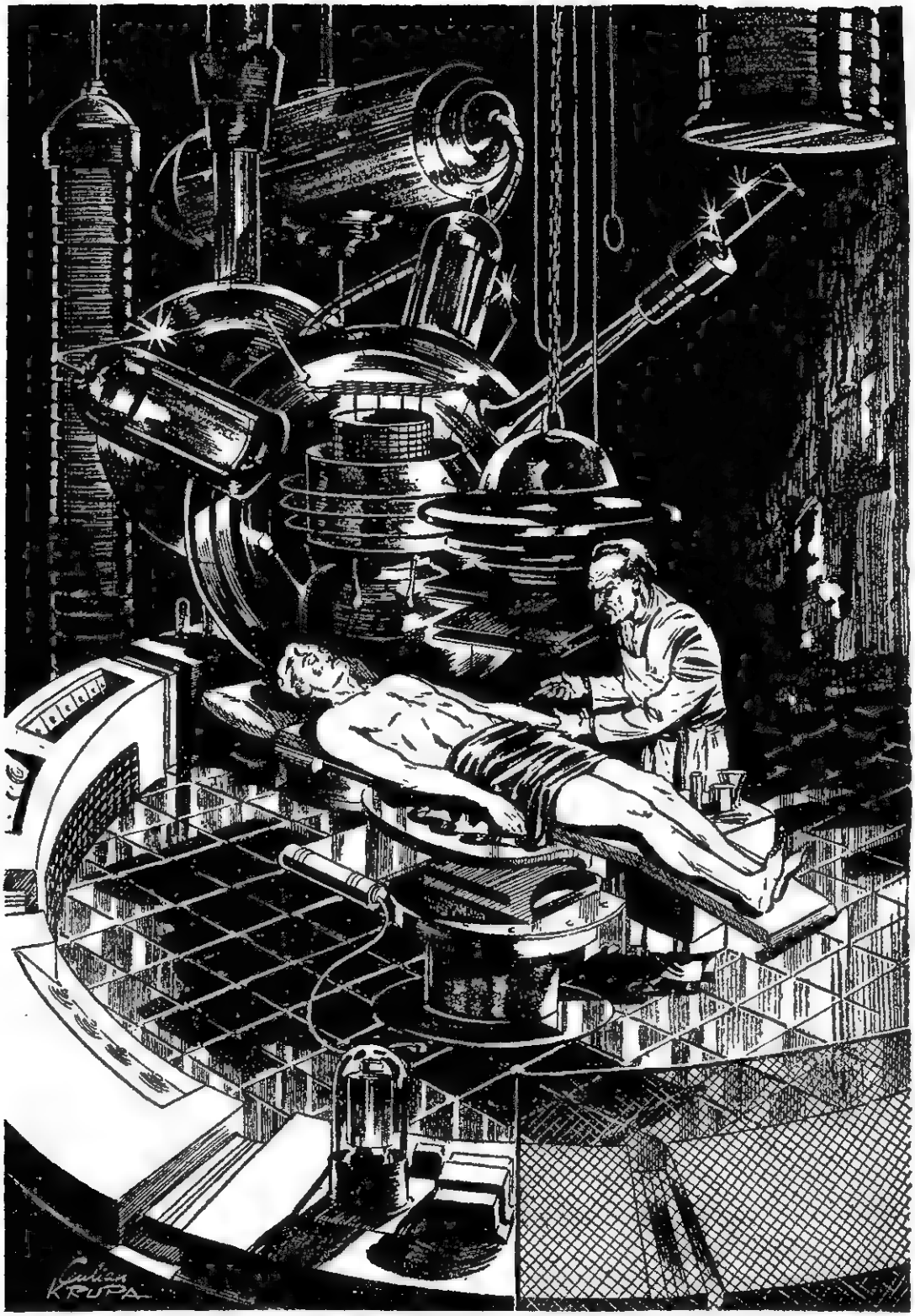
AT THE very moment that I sit here and write this article, there are probably many breath-taking discoveries in the making throughout the carious chemical research laboratories all over the world. Chemistry is definitely on the march. This phase of science has been applied and found of practical value in almost all the industries known to man. If you think this statement is rather broad, just look about you and try to find an object which does not owe some debt of gratitude to chemistry. The paper I write on, the ink that flows through my plastic pen—all owe their development to the powers of chemistry. Why, it is said that the industrial significance of a country can readily be determined by the amount of sulfuric acid that country uses every year.

Recently, chemistry has given to the medical profession new weapons with which to fight off diseases. Take for example the sulfa-drugs, who could have visualized years ago that a doctor would have at his disposal, in the most convenient form to administer, a single chemical capable of playing havoc with such a variety of pathogenic "cocci" strains? In many cases of blood poisoning, puerperal fever, erysipelas, meningitis, infection of the heart, pneumonia, gonorrhea, certain kidney infections, and others—the sulfa-drugs have been tried and proved to be remarkably successful in curing or easing the infection.

The chemists have not been content to rest amid the praises and accomplishments of their new discovery. They realized that the sulfa-drugs were just a beginning of t he battle to annihilate all the diseases and ailments which have troubled man since his origin. Some chemists began to perfect the sulfa-drugs, for while the early sulfanilamide did have powerful germ killing powers, it also possessed some undesirable properties. In many cases those patients on whom sulfanilamide was used suffered severely from the body reactions caused by the drug. One of the first things these chemists had to do was to discover the structural plan of that part of the sulfanilamide molecule actually responsible for the germ killing effect. Once they had obtained such a structural plan, it then became possible to attack additional chemical combinations onto the active nucleus. By replacing one of the unnecessary hydrogen atoms for new chemical groups an entire series of effective, and yet less irritating, sulfa-drugs were made available to the public. Examples of these are: sulfa-pyridine, sulfathiazole, sulfadiazine, sulfaquanidine, and an ever increasing number of others. Each new sulfa-drugs is designed to keep its bacteria-static reaction and at the same time exhibit certain properties which will make it more pleasant and adapt at the job it must do. Sulfaquanidine proved to be less completely absorbed by the body and was therefore employed as a therapeutic agent in the treatment of gastro-intestinal infections.

Very recently a new phase of chemotherapy (treatment of disease by means of chemicals) came into existence. It all started when Dubos isolated a certain bacillus from the soil, which is capable of producing a soluble substance proved to be effective against the gram-positive bacteria. This soon led to the discovery of gramicidin—a chemical agent which is so potent that only 0.002 mg. is enough to protect a mouse against 10,000 fatal doses of the pneumonia germs.

Even the mold has not escaped the ever searching members of the chemical profession. First it was Penicillin Notatum that took the "lime-light." This mold was found to yield a soluble extract which strangely inhibits the growth of gram-positive cocci and bacilli. Surely the readers will remember the various stories about penicillin in the newspapers. In one case a girl was dying from a rare type of blood disease and her physicians were attempting to obtain penicillin with which to cure her. At that time the country had only a limited supply of the drug and of course the armed forces were given the priority. However, it will not be long before the entire civilized world will be given the chance to use this drug when the need exists. Surely after the war a process of turning out penicillin in mass quantities will be worked out—that is if such a process does not already exist. Other molds are being investigated and the results are very encouraging. Yes, chemistry is definitely on the march and all it asks for is a chance to utilize its knowledge for the betterment of our world. Let us hope that it can be put on the full time job of helping humanity—after we have used its powers to aid in the defeat of an enemy who would plunge this world into another dark and pestilent-ridden "Middle-Ages."—*Fran Miles.*



"I came to an awareness of strange machines and rocky walls"

THE MAN WHO HATED WAR

BY EMIL PETAJA

FOSTER hated war enough to risk his life in an attempt to cross Time and escape its horrors; surely future men would learn peace!

IT SEEMED to Doctor Myles Foster that a million cold needles pinned him down. Even his eyelids, when he was able to force them open, felt to have been caked with glacial ice.

His mind worked sluggishly, striving painfully to accept and assimilate visual images.

He saw, without moving, that he lay on a flat table, covered with soft blankets. The room was small, white-walled, and windowless. But the rich light around him might have been mountain sunlight.

Now the well-textured face of an old man hung over him. It was whisked away, and through the corner of his eye he saw deft slender hands doing things above a nearby table.

"I'm cold," Doctor Foster said, like a child.

"Of course," a voice that matched the ancient face soothed.

Things were being done to help this. Heat poured over him; his arms and legs were massaged vigorously; a spoonful of clear liquid was forced between his clenched teeth. It shot tacit threads of radiance through his frosted tissue, down to his toenails.

"Ahhhh," he sighed, gratefully.

The wrinkled face above him smiled, but its eyes were sad.

Doctor Foster stopped trying to think. He was content to lie still and be fed more spoonfuls of the magical liquid.

And to sleep.

To dream . . .

An incoherent jumble of thoughts began to clash, one against the other in his mind, like dueling blades.

Long rows of figures. Ponderous words. Chemical formulas. A chubby familiar face. A mirrored thing that swung and dazzled.

Sound crept into his dreams. Mutterings that grew to ominous rumblings, and whisperings that mounted into shrill cacophonic screaming.

Followed a lightning swift sensation of intense all-pervading cold, like death —smothering him.

Doctor Foster's hands and feet twitched in agony.

He awoke screaming.

THE old face bent over him anxiously. Smooth hands shook his shoulders gently, like a mother soothing her child after nightmare.

"What—why—where——"

"You feel better now?" the old voice

queried, when Doctor Foster's shoulders relaxed, and he lay staring up at its source wide-eyed.

He was silent a moment. A shiver went over him, although he was no longer cold.

"I don't know!" he moaned, "I don't know—*anything!*"

"That's to be expected. You need more rest, and more nourishment. This mental confusion is natural. It will pass. Don't be afraid. You are safe here. We are *both* safe."

Something in the soft insinuating tones repelled Doctor Foster.

"Safe?" he repeated, "What do you mean?" He pushed up from the table. "Don't let me go to sleep again! I can't stand it! I won't! Tell me where I am—and *who* I am!"

The old eyes gleamed strangely.

"All in good time."

But Doctor Foster wouldn't be put off. He seized the old man's soft arm.

"No! Tell me *now!*"

The old man made a sighing sound, and piled cushions under Doctor Foster's back until he was half-sitting.

"Look deep into my eyes," he said, his furrowed face in line with Doctor Foster's pale ascetic features, "I will help you remember."

Again the young doctor felt a feeling of great revulsion sweep over him, but he cast it off, and his eyes stared desperately into the enigmatic grey eyes of the old man. And little by little the mists that shrouded his mind cleared away. . . .

He saw a shy studious boy, an orphan and an introvert, whom he recognized as himself. This boy, at an early age decided to devote his acute mental powers to absorbing and clarifying scientific knowledge.

He saw him as young college student, burning midnight oil over psychiatry and allied tomes, and discussing weighty subjects with his only friend, a pudgy student of bio-chemistry.

He saw him ten years later working in a small private laboratory, attached loosely to an important college, but following through his early dreams of scientific investigation.

Then, smeared across the face of the planet by a maniac painter whose brush was dipped in human blood, came War.

He saw his own life, and his friend Langley Drew's life uprooted. He saw everyone's life interrupted and pushed about. He saw thousands upon thousands of gallant young lives laid on the altar of the horror-god, Mars. He saw thousands of bewildered innocents slaughtered. He saw half the world maimed and raped and gutted.

And sometimes alone in his house he wept. Wept because there was nothing he could do.

His turn came to fight. He fought, although it sickened his mind to it, and was wounded and ravaged with fever. Then at last he was returned to his little laboratory, bitter and resolved.

"I hate and detest and despise and abominate War!" he poured out his feelings on his friend Drew, attached to the staff of a large war hospital. "War makes a mockery of reason and decency. Of everything civilization stands for!"

Langley Drew nodded soberly, shrugged as if to say, "But what can we do about it?"

BUT Doctor Foster's hatred of War was a burning thing deep inside him. It was a fanatical phobia by now: a driving force that wouldn't let him eat or sleep until he had completed a plan whereby he could do something about War—for himself at least. For the sake of his own sanity.

The answer to the core of his prob-

lem, when it came, struck his mind with meteoric force, and the rest was comparatively easy. Before he hardly knew it, all was ready.

The great day came.

Through the front window he watched impatiently while Langley Drew made his ponderous way up the steps of the big stone house. It was Winter, and raining.

"Everything set?" Drew puffed, shaking the rain off his big black umbrella and pulling off his coat.

Doctor Foster just nodded, and tugged his plump friend into his new big home laboratory. A gigantic apparatus half-filled it.

Langley Drew put on heavy glasses, and inspected it minutely. It was basically a white porcelain table under glass-like material, with a strange super-refrigerating device set beneath it.

"Let me try to absorb all this—" Drew begged, licking his lips and frowning. "By means of some—er—psychiatric trick you have discovered you mean to hypnotize yourself, then have me freeze you instantaneously inside that glass case. You'll be brought out of this Sleeping Beauty act some time in the distant future, when War is a matter of dull ancient history. Is that right?"

Doctor Foster laughed.

"You make it sound like a Houdini stage illusion?"

"Seriously, Doc, do you think it'll really work?"

Foster nodded gravely.

"I hope so. You see, I have discovered a means of releasing my mental consciousness from my physical self, and transferring it to a higher dimension where all our Time exists at once. At the proper three-dimensional time this mental consciousness — labelled Doctor Foster—will be returned to its body, which by special refrigeration will have been kept cell for cell exactly as it is now through the passing centuries!"

"Centuries!" Drew cried. "Wouldn't *one* be enough?"

"I want to be positive—" Foster said, shaking his head, "that by the time I awaken the world will be a serene majestic planet, freed forever from the shame that is War. . . ."

He handed his friend a tattered bulky notebook wherein was contained explicit instructions regarding immediate and future treatment of the machine which, along with Foster's house and other worldly goods, was to be handed down to Drew's pudgy son when he died. And to his son or daughter, and so on down the Drew line—until the hour of awakening arrived.

They shook hands solemnly. Then Foster underwent the intricate preliminaries he had planned so carefully, and finally closed his eyes in a sleep almost as long and as deep as death.

FROM that point on there was nothing. Foster's mental images were cut off clean, as with a knife.

He blinked, stirred, and stared uneasily at the old man. His mind throbbed with questions.

What had happened? Was this the future? If so, why was he hidden away in a little room, instead of forming the nucleus of a large eager-eyed group of future scientists, awed by this miracle?

"Tell me—" he began.

The old man nodded understandingly.

"Now that you remember who you are, you wish to know where you are, and what kind of a world—"

"Yes, yes!"

Foster frowned. There was something in the old man's attitude, an elusive shiftiness, that displeased him.

"As to yourself," the old man said,

"I know all about *you*. We all do. That battered black notebook you handed Langley Drew in 1943 has become an important scientific document, read by laymen and scientists alike. It tells why you—"

"Did I succeed?" Foster cried impatiently. "Is this the twenty-fifth century?"

The old man nodded.

"My name is Anto Daw. I am a descendant of Langley Drew, and a passionate student of science. That is why I awakened you, and saved your life."

"Saved——?"

The old man looked away.

"First I will bring you up to date in the history of the world from your time to mine. After the Great War of the 1940's——"

"Yes."

"There were others—"

"Other wars?"

The old man named Anto Daw nodded.

"Small ones, mostly. And then for over two hundred years there was peace. Wonderful peace, and great scientific advancement in the world.

"That was before the Science-Religion Cult grew to its full power. . . ."

Anto Daw drew a slender blue-veined hand across his high forehead.

"The Science-Religion Cult was originated by a harmless group who made fetishes of the scientific great, kneeling in front of such science-saints as Louis Pasteur, Dr. Ehrlich, and many others. Some you would not recognize.

"The movement spread all over the world. And since other religions seemed unnecessary in the light of all new knowledge, and Science gave the people their paradise here on Earth—through prolonged and vigorous life, as well as all possible comforts and luxuries—its popularity was easy to understand."

Anto Daw's eyes shone as he spoke.

"Go on," Foster prodded, when he paused.

"The central figure in this worship was a man known as The Immortal One"—Anto Daw's eyes were on the floor, and a cryptic half-smile flitted over his lips—"and this man's disciples swore that he would live forever, foretelling the time when there would be no more death on Earth for anyone!"

NOW the old man stopped to consult a time-piece on the table, and then fed Doctor Foster more of the colorless energy-concentrate.

Foster waited, puzzled and uneasy again.

"About the next war——?" he hinted.

"Like every movement that has widespread appeal Science-Religion had its opponents. These reactionaries banded together and took it upon themselves to try to debunk Science-worship, and bring about a return to the old Gods.

"They called the Science-Religionists blasphemers and heretics—and called The Immortal One the biggest blasphemer of all. They tried to suppress his writings, and his disciples' writings. They identified him with Satan. And on several occasions they tried to murder him.

"But the worshippers of The Immortal One saved his life, and this attempted suppression only angered them and made them all the more violent in their fanaticism. Many, possessed of martyr complexes, sacrificed their lives for this science-god.

"Incident followed incident—until there was War in the world. The most devastating ever seen on this planet. Scientific achievement of past centuries included forces of destruction beyond anything your 1944 warriors could

dream of. Whole cities, whole islands, were wiped out by the flick of a finger.

"And it isn't over. It rages over our heads at this very moment. I am a scientist, an important scientist, I may say. That was why I couldn't leave you up there to be killed. That was why I brought you down to this secret subterranean room. Here we will both be safe until it is all over . . ."

Doctor Foster buried his face in his hands.

So this was what he had slaved and sweated for! Toyed with Time in order to be allowed to live five-hundred years ahead! Now—to find himself in a world more chaotic than the one he had left!

Safe! His lip curled bitterly. What difference could that make when there were still men in the world who allowed wars to be fought in their names!

Blazing anger sent his blood rushing to his temples.

"This fake!" he cried. "This so-called Immortal One! Why didn't he prevent this war? If he had such power over his disciples, why didn't he mediate with——"

"He couldn't," Anto Daw said softly, turning away.

Foster caught a glimpse of that uncanny glitter in the old man's eyes as he did so, and it sent a feeling of revulsion quivering through him. Revulsion combined with sudden knowledge—

"There's always a Hitler, an Alexander—a traitor to Mankind! And The Immortal One is the worst traitor of them all!" Doctor Foster's face was illuminated with fury. "And you are that traitor! You are The Immortal One! That is why you are hiding!"

Anto Daw turned his lined face toward the Doctor, and his eyes were filled with a great sadness.

"No. I am only his high priest," he said softly. "*You* are The Immortal One!"

THE END

THE WONDER BEAN

FOR more than 5000 years a mainstay of China, the soybean has made a wow of a debut on our daily menues. These sprouts are very interesting . . . a fresh vegetable that can be grown in any climate at any time of year, without soil or sunlight, and in three to five days. Soy sprouts can be grown in your kitchen or on the back porch or the fire escape. All that's needed is a fruit jar, a little chlorinated lime, a small square of window screen or cheap cheesecloth, and dried soybeans, which are inexpensive.

The variety of ways in which soy sprouts can be prepared makes them appeal to almost every palate. They can be boiled and served hot with a savory sauce, or served cold in green or fruit salads.

Being highly nutritious, soybeans are the most complete natural foodstuff known. With the growing scarcity of animal foods, soy sprouts will become increasingly important, both to meet our own continuing food needs after the war and to help the underfed or starving millions in Axis chained countries.

You've probably been eating part soy doughnuts and liking them, for many wholesale bakers have been making them for some time. And if your link sausage has shrunk less in cooking lately, that's because a small percentage of soy flour is mixed with the ground meat.

The German scientist, Furstenberg, had a gift of phophecy in 1917, when he visioned the soybean as "the plant that is going to revolutionize the nutrition of humanity." At that time Germany was importing more of them than any other country, mostly from Manchuria.

One of Hitler's first acts after coming into power was to plan a 2,000,000 ton soybean reserve. He also arranged for vast soy planting in Rumania and other Balkan countries. Part of this huge reserve has been used in making explosives and other war chemicals, but most of it has been milled into flour.

The soy surface has only been scratched according to Dr. Artemy Alexis Havorth, who spent eight years in the Peking Union Medical College studying the more than 5000 different varieties of soybean which have been developed in China.

Most of the vast increase of the soybean production will be used by our own and other United Nations armed forces, but soy dishes will be very much the fashion in all parts of the country in the near future.—*Ava Brown.*

War Criminals of Renault Island

By C. A. BALDWIN

MARS had the weapons—but they needed Hitler's murderous skill in making war!

"THAT'S enough! I warn you, Captain Lester, such fantastic tales and unfounded charges against Air Corps officers—and especially against government officials—can only result in serious personal repercussions. However, in view of your gallant conduct in the past war, I'm choosing to overlook what you have just said to me. As far as I am concerned, it has never been said. But understand, Captain, I won't repeat the courtesy. From now on your lips must be sealed!"

I could feel the blood rush to my face and anger surge through my body as General Hammond's icy words came at me with the cold blast of space. The surprise and shock were hardly as great as my mortification. Discretion, learned in seven years of service in the famous U. S. Air Corps, was something I had never understood, in this moment. I exploded, emotionally, and spoke.

"General, I'm accusing no one! I am merely asking for an investigation. We've got to make sure that Hitler and Hirohito are actually still in exile on Renault Island, or whether they have escaped, their getaway covered up by the substitution of a couple of disguised stooges.

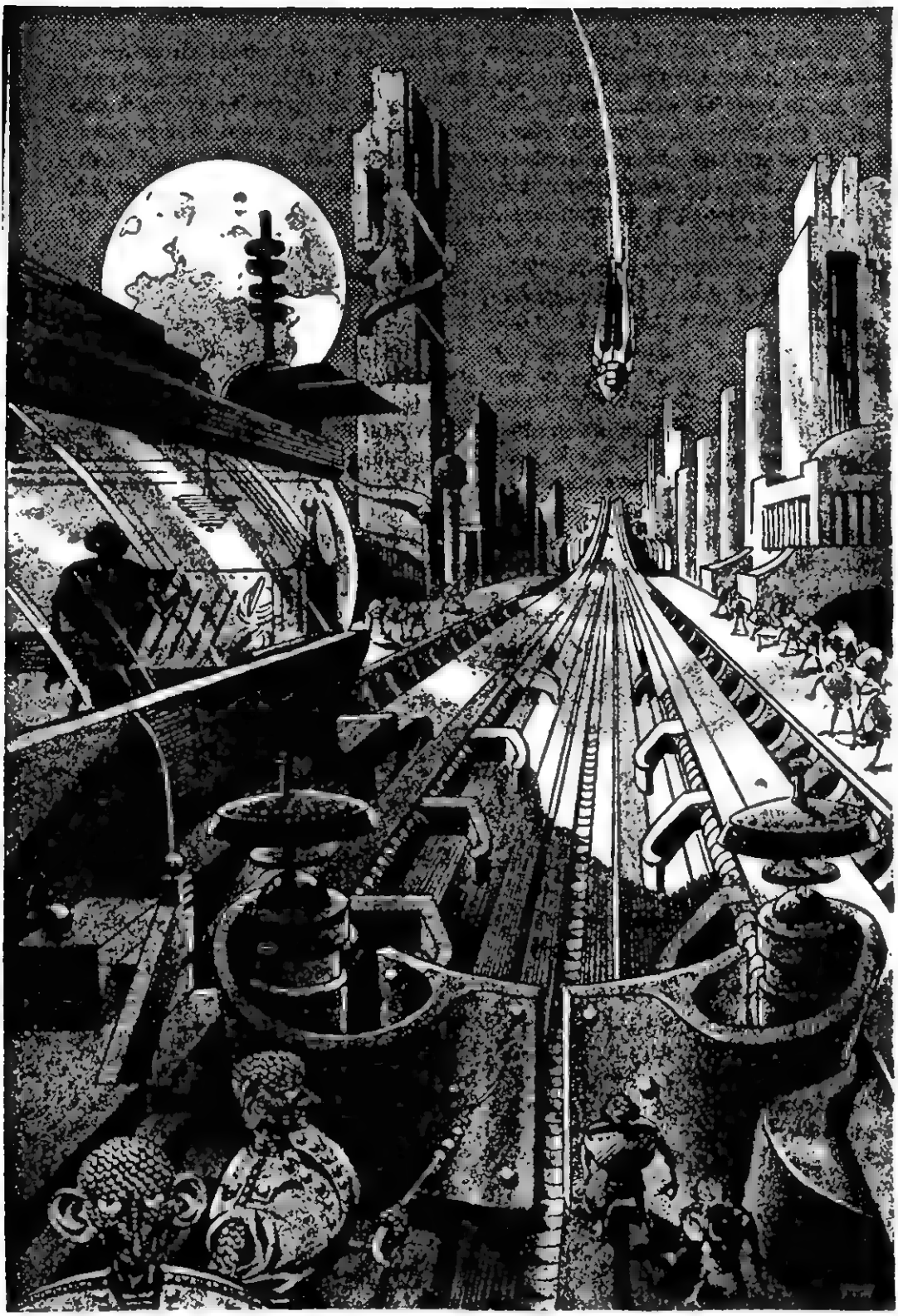
"My information is true! I know it is. The investigation wouldn't be to convince me! I cannot understand how *anyone* can risk repeating the smug complacency that was the cause of the slaughter at Pearl Harbor and of the disaster that followed on Bataan!"

"Captain Lester . . ."

"Hear me through!" I snapped. "General, if those two murderers are on the loose, we can expect plenty of trouble. How can you sit there underneath your brass hat and behind your shiny buttons and close your eyes to something that demands investigation, if only to determine its untruth? What if I'm right? You'll be criminally accused . . ."

The general's eyes pinpointed mine, his face took on the color of a beet, and his lips set in grim, straight lines. He half-rose, then sank back in his chair. I could see the effort he made to regain control of his temper, and it sent a sudden chill through me. There was something here . . .

"Captain Lester," the general said coldly, "consider yourself under arrest pending courtmartial proceedings. The charge is conduct and language unbecoming an officer and a gentleman. This army has no place in it for men who believe fairy tales . . . Forbes, place this



The first ship dove down to the attack

man under—"

"Arrest, hell!" I burst out, stung by the implication of dishonorable discharge contained in General Hammond's last remark. The courtmartial he intended for me would be a farce. But there was one thing General Hammond didn't know— "You can't arrest a civilian, Hammond, and that's what I am as of one hour ago. My official discharge was effective then. And now, since you've taken it upon yourself to make threats, I'll make a few of my own—or rather, not threats, but *promises*. When this whole thing comes home to roost, I'll be in the front row at *your* courtmartial—and I'll have plenty to say as one of your accusers! Put that in your brass hat and let it stew!"

I started to salute, remembered I was no longer in the Army, wheeled and stalked out of the door, making sure to slam it so that it trembled on its hinges. With me I carried the memory of a purple face; but I knew, too, that mine was as purple, to judge from the heat that flamed from my cheeks as I walked blindly down the street outside.

WITH the cold air blowing on my face, the tempest of anger in me began to subside, and I started to do some sane thinking. I realized that I'd made a chump of myself by flying off the handle. Civilian or not, my outburst would serve no useful purpose. I was still theoretically in the service of my country, my discharge having come only because of my particular knowledge of rocketry and aviation in relation to space ships. It had been suggested that I work out my ideas in a government laboratory.

And, after all, the story I had told the general was completely devoid of any concrete proof. If I had told him the whole truth of my source of information, I would have been tossed into the psychopathic ward of the Army hospital. I couldn't tell him the actual story of the half-crazed guard from Renault and his only partly coherent ravings about space ships, strange visitors, of his subjection to torture for observing forbidden sights and threatening the commandant with exposure, of an escape in an open boat to drift for many days without food or water . . .

It would have been different if I could have produced the guard, but he had vanished as if the earth had swallowed him up when I returned with food and water and aid to carry him from that icy beach.

"What I need is a drink!" I concluded aloud.

I reversed my blind course down the street and finally reached my hotel. In my room I mixed several drinks, then sat down to think over my plans for the future. Somehow my enthusiasm for the government laboratory was completely dampened. I couldn't get my heart into it. I could think only of that poor devil lying there on the wet sand, gasping out his story . . .

I was mixing my third drink when I heard a knock at the door. My disposition had not been the least improved by the drinks, so I yelled: "Come in, dammit!"

THE door opened and I found myself gazing confusedly at a tall, slender girl whose beauty and dignity of carriage brought unchecked admiration into my eyes and lifted me with undue haste from the chair in which I had been crouched.

"Captain Lester, I believe?" Her voice had all the qualities of soft melody mingled with the music of a delightful accent, accentuated by the fact that I was hearing and seeing her through a rosy cloud of good scotch whiskey.

When my tongue released itself from

its temporary paralysis I corrected her.

"*Ex*-Captain Lester."

"Yes. I know about that," she nodded. She entered the room, closed the door, and gracefully seated herself in the chair I had just vacated.

With a start I recalled my manners, military and civilian. I bowed a bit awkwardly and reached for the scotch. "Will you have a drink. . . ."

"No, thank you."

"Then may I offer my services, Miss . . . ?"

"The name doesn't matter at the moment," she said. "For the sake of convenience, you can call me Jonice. If those services you mention are still on call when I tell you what I want, you'll learn more about me."

The soft, sure way in which she spoke, the slow, graceful gestures of her beautiful hands, served to rivet my attention to her. My eyes went to her exquisite proudly-cast face and I didn't want to avert them, even at the risk of staring rudely.

"They could be pretty stiff before I'd back down," I committed myself rashly.

"They're stiff," she said. "You may even want to recall the obvious compliment."

I flushed, swallowed the rest of my drink and put the glass down on the table. Then I leaned back, hands on the table edge to brace myself, and said: "Okay, shoot."

"I'll come straight to the point. Don't interrupt, because my time is limited. If you accept, you'll get a fuller explanation and answers to any questions that may occur to you. If you don't accept, you'll know as little as I can possibly tell you, and you'll forget what I do tell you."

My lips tightened; this was the second time today someone had taken a crack at my memorizing liberties and almost instantly I mentally withdrew fifty percent of my offer of my services. I would have gone all the way, but a girl with the looks she had made me want to be a sucker to some extent at least. Chris Lester, late of the Air Force, is certainly not late of the ordinary virility of the male of the species! So I just listened for more.

Jonice handed it out fast. "You are one of the few men on Earth who has some reason to believe that Hitler and Hirohito are no longer confined to their island exile."

I DIDN'T need to brace myself against the table. I was erect on my feet, jolted there by that straight shot to the jaw.

"Keep talking!" I said tensely.

"Although your information was not of a concrete nature, you undertook to convince a certain high authority of its truth. For your pains you were severely criticized, and if you'd still been in the Air Force, you'd be in a cell awaiting courtmartial.

"The fact that you have this information is not too important to you now, but the fact that you are no longer bound by oath of allegiance to the United States Army is important to my government. Therefore we are prepared to offer—"

I was standing right in front of her now, looking down at her upturned face. "Look I'm no longer an officer in the Army Air Force, and I have damned little respect for the brass hats who are running it; but I am still a loyal citizen of the United States and any information I have is not for sale!"

Very patiently, in a slow, deliberate voice, she told me everything that had happened to me, repeated every detail of what I knew. She concluded: "Do you know anything we'd have to *pay* to learn?"

I stepped back, considerably cooled

off. She was punching too hard and fast for me. If I didn't want to appear to be a complete jackass, I'd better hear her out. The wind was completely taken out of my sails. I pulled up a chair and made up my mind to stay there until she was finished.

"My mouth is shut and my ears open," I said.

"Fine, she said, and it seemed to me her eyes were smiling a little. "Now, here's the story. You have a chance to help save your country from invasion and ruin. You are also a forlorn hope to save my own country and entire world from complete domination and slavery under Hitler and Hirohito. I came to that conclusion because of one fact: your own beliefs in rocketry and ships designed to travel through space, and the manner in which you gave credence—sufficient to open yourself to exactly the ridicule you received—to the story of an actual space ship at Renault. There *was* a space ship there—from Uranus. I, too, am from Uranus!"

She eyed me for the fraction of a second to see if she had shocked my credulity beyond reason, then she went on when I only swallowed hard and remained silent.

"Hitler and Hirohito are no longer on Renault. With the connivance of treacherous and personally ambitious men in your Government and Army, and with the assistance of power-loving men of Mars, their escape has been effected. Both are now on Mars, and have been there for the past two years."

ASTOUNDING statement after astounding statement. But what she had said before was true—I had believed one fantastic thing, now it was reasonable that I should believe more, if only to be consistent. So I said nothing, only listened as she continued her incredible recital.

"Mars is inhabited by a war-making people who have plans to conquer the entire solar system. Their plans have been made possible by the genius of their scientists who have created space ships that will carry thousands of men and deadly weapons into every area of the system.

"The Martians have all the qualities necessary for making war on such a gigantic plan—except the strategical ability that very nearly carried the Axis to victory. That is where the two prisoners of Renault Island come into the picture. Their cunning and military planning, coupled with their inherent treachery, was well-known to the Martians and consequently their escape was arranged. The Martians believe that given a second chance to plan, and this time eliminating their fatal errors of their first attempt, failure would be impossible.

"Temporarily, however, that isn't the whole answer to the Martian scheme; the space ships that will provide the two dictators with the 'secret weapon' they didn't have before, can't be built in sufficient numbers—*yet*. The reason is *stulite*, an ore which provides the propulsion energy. You here on Earth know it in one form as U-235, an isotope of uranium. Mars hasn't much *stulite*.

"But Uranus has! Inestimable quantities of it.

"Ordinarily, that should control the situation, reasoning from an Earth standpoint. And up to now, it has been a controlling factor. Knowing the plan of the Martians, we have allowed no exports of *stulite*. Thus, the Martians haven't been able to build the thousands of ships necessary to crush all opposition.

"The net result of all this has been the selection of Uranus by the Martians as their first opponent. Our space ships

are small. We don't know how to make them bigger. Nor have we any weapons, except a defensive ray which thus far has persuaded many of our people that there is no need for offensive weapons. But recently a Martian scout ship was seen to *apparently* encounter the ray and escape unscathed. We are not sure, but if it is true, it means the secret of the ray may have been partly or wholly counteracted by Martian scientists.

"The people of Uranus are not a race of warriors. Their talents, their sciences, have always been turned to the advancement of culture and social life. Up to the present time we have never even dreamed of an army. We don't know *how* to fight, to put it most bluntly.

"Now the attack is coming—with everything the Martians can muster. Not too much, but more than enough for the conquest of Uranus. Then, with unlimited power at hand, and with thousands of ships already built, they will be ready for instant expansion of their plan. Once Earth falls, nothing can stop it! Or, more pertinently, once Uranus falls, Earth will be helpless, and the entire solar system with it."

SHE stopped speaking and now I realized that the surety in her voice was gone. It was replaced by the obviously pathetic pleading of a child, of one who is helpless and realizes it. And yet, I knew that he pause was not because she had nothing further to say, nor the will to say it. I ended her hesitation.

"What makes you tell me all this?"

She looked straight at me. "Captain Lester, I am offering you command of all the forces of Uranus."

I stood up. *"Me!* A mere captain in the Army Air Force!"

"Consider," she said. "You are a successful leader of men—your exploits in the war proved that. You are a mechanical genius, being one of the few men on Earth who have started experiment in space travel. The action of your *secret* government in making it possible to continue that experiment proves how highly you are regarded . . ."

"Just a minute," I said. "What do you mean, *secret* government?"

"Isn't it logical that the government that would want to help you in your work to aid a world's defense would not be the same government represented by the general who chose to threaten you with what amounts to Totalitarianism?"

"I don't get it," I said bluntly.

"And I don't propose to explain further," she said. "Let's go on with those considerations I had begun to enumerate. You are a man without known relatives or particular friends. Your disappearance would not be noted nor commented upon. Not even by such men as General Hammond."

"By that, I gather, you mean Hammond is one of those traitors you claim is working, has worked, with the Martians. Perhaps even one of the men who helped engineer the escape of Hitler and Hirohito from the island?"

"You are clever" she admitted. "And you make plain my final point: the reason I came to you. You are the only Earthman I feel sure is *not* an enemy. You are the only Earthman to whom I *can* come." She stood up and faced me. "Captain Lester, will you . . ."

I don't think she had enough control of her voice to finish.

Somehow that realization brought a lump to my throat, and a peculiar feeling deep inside.

I WALKED slowly over to the window and looked out. Down below was the city, an *Earth* city. It was so fantastic to consider. I was being told now, all in one tremendous, undigestible dose, that there were other than Earth

cities, other than Earth civilizations, other than Earth people who had emotions exactly *like* Earth people. I was being told there were peaceful planets, warlike planets, otherwordly hates and fears and loves and hopes. I was being relegated to a position as just one unit in a whole which was in turn only a unit in another whole.

Only this morning I had been a mere captain in the U. S. Air Corps. I had looked at the blue sky and wondered if a ship would some day leave the Earth and land on another planet. Then I had found a man who had been dying, and who had said he had *seen* a ship *come* from another planet. Now I was talking (if I chose to *believe* it) to a beautiful girl from Uranus; was listening to her tell me Mars was about to attack her world and mine; that Hitler and Hirohito had escaped, and were heading the new invasion.

It was utterly fantastic!

As my eyes traveled slowly over Washington's skyline, noting familiar buildings, finally coming to rest on the reality of the White House and the emblem of liberty the Stars and Stripes, flying proudly from its staff, I suddenly found that it wasn't too fantastic to believe. I *did* believe it!

I turned to face the girl who called herself Jonice.

"Tell me, why do you think I can be of any help?"

She hesitated only an instant. "When your war was in progress, we kept fully abreast of its developments by means of which you have no understanding at the moment. Your exploits, your natural talent for leading men to the swift destruction of your enemies, became known to us.

"When we realized that you were such a man as we needed, we placed you under special observation. We know intimately of your acquaintances, your opinions, your loyalty to your government. We saw and heard when the Renault guard told you what had happened. We knew what would happen to you when you went to General Hammond.

"I know it would influence you not at all if I told you that you could have whatever a world advanced in culture could offer, if you would come to lead our armies. So I am just saying one word now that I swear comes straight from my heart. *Please . . .*"

It was the right word, because then and there I was ready to lay my life at her feet.

CHAPTER II

Through Space to Uranus

I PACKED only a few cherished personal items and as twilight started to descend over Washington, we left the hotel. As we emerged, a car drew to the curb. A hand released the door. Jonice quickly entered, and I hesitated only a second while taking one last fleeting glance at the scenes and Government buildings that had become so much a part of my life. With a quick intake of breath that was evidence of the casting out of my last doubts, I stepped into the car and sank down on its cushions.

As the car started off, Jonice's voice cut through the darkness. "You will find the wisdom and experience of our Council Minister to be most helpful. This is he, Tamura Vlitta," and she accompanied the words with a gesture to her left.

I could distinguish the outlines of a finely chiseled head and the vague lines of a luxurious beard. My extended hand was grasped by one that was soft, but wrinkled with age. From the awkwardness of his handshake I knew that

it was not a customary salutation, but the words, "My son, your presence gives me great pleasure and renewed hope," made me feel that he was one whose friendship I could be sure of, whose cooperation would be given most willingly.

The car, which had been traveling rapidly, now left the outskirts of Washington and increased its speed as we hit the broad highways and lessened traffic. A mantle of silence fell over the car and, although I was sure Jonice had much to tell me, I was grateful for the respite to collect my thoughts and prepare myself mentally for what was to come.

Finally the driver turned off the main highway and the car started to bounce and jolt over an unpaved road. A few times Jonice was thrown roughly against me. I placed a hand on her shoulder to steady her and received a slight smile for my thoughtfulness. Just as I was on the point of breaking the silence, the car came to a stop in a heavily wooded section, in back of which I could dimly ascertain the outlines of an old farm house.

The motion of the car had no sooner ceased when it was surrounded by a group of men with guns pointed at us in a very businesslike fashion.

Jonice called, "All is well." The guns were quickly pocketed and two of the men hastened to throw open the doors. As the three of us emerged from the car, the entire group placed their right hands over their hearts and inclined their heads in a salute of respect to Tamura Vlitta, their Council Minister.

Without further ado, Jonice said, "Come. Time grows short." The men immediately formed a rough circle around us and led the way along a path through the brush and dense vegetation that had sprung up around the abandoned farm house.

Then as we broke into the clear and approached the house, I saw still a larger group of men surrounded by packages and bundles of all descriptions. Again came the peculiar salute of respect. The packages were quickly picked up and the entire assemblage started to move toward the open field that I could see beyond the house. We moved rapidly toward a long, high shape which I could discern looming out of the darkness.

At a command the men broke into action and a tarpaulin which had been covered over with hay to resemble a long haystack came sliding down to reveal the graceful outline of a space ship. Even in the complete darkness the metal of which the ship was made gave off a luminous glow that made the surrounding darkness seem even more black.

A door was thrown open, the interior of the ship was bathed in a soft light and Jonice, Tamura Vlitta and myself filed in to be immediately followed by the others. All of this action, from the time the car had stopped in front of the farm house, had been accomplished in almost complete silence.

MY FIRST brief glance at the interior of the ship revealed luxurious appointments, compact and artistically designed furnishings. Then I turned to get a look at those who were to be my companions on the trip through space, and perhaps my fighting mates in time to come.

Tamura Vlitta was much as I had pictured him—extremely old, but carrying his splendid height with the straightness and ease of a young man. As my eyes traveled to take in the others of the party, I could not help but be impressed. Almost without exception they were quite tall and slender. They were built along classic lines with high foreheads denoting intelligence,

large eyes, long of limb, and beautiful hands and fingers. Certainly this was not a race of warriors, but a nation of artists born to create and construct.

I noted suddenly a bit red-faced, that I was being studied just as closely as I had studied. And, now Jonice, who had been standing close by, stepped forward with her lovely smile and said, "Gentlemen, this is Captain Lester, of whose past history you already know a great deal.

"It is to him we shall look for guidance in all affairs pertaining to the defense of Uranus. Therefore, in behalf of the Supreme Council and its ruling head I hereby pronounce Chris Lester the Commander of our forces to repel the Martian who will soon be attacking our civilization."

Quickly, then, she introduced each man, who, when his name was called, would step forward, smile and place his hand over his heart—omitting the bow which I took for granted was accorded only to their Council Minister and other ranking dignitaries.

Each introduction was but the mention of a name until she reached the last in the circle that had drawn about us. He was a handsome youngster, set apart from the others by a pair of brown flashing eyes that gave the impression that he was built with electric wires and springs and would spark and bounce at any moment. Here was no scientist or creator, but an adventurer with an inborn love for fighting.

I had noticed a striking resemblance to Jonice, and therefore was not greatly surprised when she said, with pride in her voice, "Janito, my brother."

He came forward eagerly, clasped my hand instead of using the ceremonial gesture to which I had already become accustomed, and in a vibrant voice said, "I welcome a fighting man to Uranus. Please accept my services to use as you deem best."

I was about to acknowledge his sincere speech when the ship gave a terrific lurch and while I was trying to regain my balance, Jonice, voice husky with emotion, said, "We return to Uranus."

CHAPTER III

An Internal Enemy

I AWOKE the next morning in the unaccustomed surroundings of a space ship cabin. We had retired almost immediately after the start of the flight when Jonice had pleaded exhaustion and suggested that our conversation be resumed in the morning.

The view from my cabin window showed only a bleak grayness reminding me of nothing more than the fogs I had witnessed in England.

I jumped from my cot, dressed hastily and, entering the main cabin, found that I had already been preceded at breakfast by Jonice and her brother. Jonice greeted me with her usual charming smile and Janito immediately arose and beckoned to a waiter. I noticed that members of the crew were busy about their tasks, passing through various doors and all seriously intent upon their projects.

"Let me warn you," Jonice said. "Our journey may be hazardous. Our trip is known to our enemies and they'll stop at nothing to prevent this ship from returning to Uranus. Indeed, only the clever navigation of our pilot prevented us from being intercepted on our flight to your country."

"We have weapons for defense?"

"Offensive and defensive ray guns. But they would prove inadequate if we were attacked in force. The operations of the ship and its weapons will be explained to you."

As she spoke, I had the premonition that the flight to Uranus would prove to be anything but uneventful. At the same time I felt a bit frustrated that there was nothing further I could do to prepare for what might be a battle for life.

Moments later, while I was conversing with Jonice, I saw her eyes light up and a smile illuminate her face. Turning in the direction of her glance, I saw a tall, powerfully built fellow entering the cabin. I don't know whether it was the sullen set of his eyes, or the indifferent, almost insolent look he bestowed upon me; at any rate I took an instinctive dislike to him.

Jonice said, "Here is, Lyonul Relvon, our Second Council Minister and one of the foremost space navigators of Uranus. Lyonul was busy plotting the course for our homeward journey last night, and therefore, was unable to greet us upon our arrival."

In spite of my intuitive dislike for him, I offered my hand. Slowly, his eyes took me in, and in a tone that left little doubt as to his feelings, remarked, "I see you are here."

I burned inside, but thought I would be wise enough to return the snub with actions rather than words. Deliberately turning my back to him, I faced the girl, who had been a silent witness to the little by-play.

"Jonice, I believe—"

My words were cut short by a vicious slap over the side of my face and ear that made my head ring.

"Your insolence for a hired killer is—"

That was as far as he got. Recovering from his blow, I wheeled and drove my left fist toward his body. As his arms came down in a gesture of instinctive protection, I crashed my right hand into his mouth. He fell backward as if he had been hit with a battering ram, staggered and finally smashed against the wall, then sank to the floor.

JONICE, her face white with anger, jumped to her feet. When she saw that Relvon was merely stunned, she exclaimed, "Your position has made you too presumptuous, Lyonul! The Captain intended no disrespect in addressing me as Jonice. He has not been informed of my title. Your hasty action has brought you a well deserved punishment."

Then, turning to me, she continued. "Perhaps I am largely at fault for not telling you that I am the ruling head of Uranus, Princess Jonice."

I swallowed hard. She went on:

"Although his attack upon you was an insufferable act, your action is not to be condoned. As Military Commander of Uranus, you have committed a serious breach in striking a Council Member. This would not go unpunished if you were familiar with our laws and customs."

Still raging inwardly, I replied, "My apologies, Princess, for subjecting you to an exhibition of my anger. But, if I understand my position correctly as the military head of Uranus, I am by virtue of that position in active command of this fighting craft. Consequently, an attack upon me by one of its crew or passengers becomes an act of mutiny and by the usual military standards is punishable by death.

"And, while this is an unpleasant incident, it is perhaps a good thing that it did occur. If I am not to have the cooperation of every citizen of Uranus, including its Princess and Council Members, we may just as well turn this ship around right now and call off the whole deal."

The anger fled from her eyes to be replaced by hurt and confusion. A tear or two started, and Princess or not, I

could see that she was still a young and unhappy girl who understood little of the ways of men or war.

Perhaps she saw the look of commiseration that stole over my face, because she gently laid her hand upon mine and said, "I'm sorry, Captain. It seems as if we have all been very foolish."

I was about to answer and add an apology when Relvon, whom we had both momentarily forgotten, broke into the conversation. He was now standing upright, holding a handkerchief to his bleeding mouth.

He seemed to have recovered complete use of his faculties and said quietly, "A thousand pardons, Princess. I deeply regret that I have given you cause to doubt the trust you have placed in me. I assure you that my actions were due solely to my anxiety to uphold the dignity of your position and title."

He turned toward me: "You have been selected by our council as commander of our military organization so long as the council believes that a state of emergency exists.

"Although I alone was opposed to bringing you to Uranus, I will abide loyally by your decisions and commands—for the sake of Uranus. But," his eyes narrowed to mere slits, "I will not forget the foul blow and after the Council has been convinced that their fears of a war with Mars are groundless, our personal score will be settled."

I started to burn up all over again and was just on the point of administering a real Yankee thrashing, when I was stopped by the look in Jonice's eyes. That look would have stopped an army of men, so my arms dropped limply to my sides and I retired to my own cabin.

THE next few days were uneventful, but most interesting. From Janito I learned much of Uranus, its people, their habits, their sciences.

In air travel, radio, and in a few other phases of civilization, they were far superior to our own most modern developments. Space travel was quite common; television had been perfected years ago; and the solutions to many of the social problems that had troubled earth dwellers made Uranus almost a Utopia.

Their secret trips to earth had been frequent; where their scientists had obtained many of their ideas and developed them to even more complete and advanced stages than on earth.

The one thing that had amazed me was quite simply explained. I had been astonished by the fact that every individual on the ship spoke perfect English and was even more astonished to learn that the English language was being taught in their schools in contemplation of commercial relations with Earth.

My mechanical education was most fascinating. I learned the principles of their mastery of space travel, how to operate and pilot the space ship, and was shown the mysteries of their small offensive and defensive ray guns.

After that, and bearing in mind Jonice's warning that Uranus had never had an army or any military training, I insisted upon a daily gunnery drill. Although the crew sadly lacked military precision I found, to my delight, that they were natural marksmen and almost wished for a skirmish so that I could see what they were capable of doing under combat conditions.

Lyonul Relvon, I learned, was the fair-haired boy with the Princess. His aggressiveness, worldly manner and apparent devotion to her had quite swept the beautiful lady off her feet, and it appeared that Uranus was doomed to have a new regent thrust upon it.

This was a most unhappy moment for

me as I had fallen completely and madly in love with Jonice.

CHAPTER IV

Action

IN THE navigation room I had just been informed that Uranus was but two more days journey and I was about to enter the main cabin to discuss the arrival with Princess Jonice, when the door of the radio room was thrown open and the operator came lunging out.

He stopped his wild rush when he sighted me and exclaimed, "The visa-screen shows a Martian battle craft approaching!"

I almost knocked the chap off his feet as I piled into the radio room. I sounded the alarm siren, threw on the communication switch, and yelled, "Battle stations! Martian ship approaching!"

Jumping to the visa-screen, I saw a giant battle craft coming up on our left. Almost immediately another object came into view and I broke out in a cold sweat as I realized it was another battle cruiser flanking us on our right. My despair was about complete when the screen showed still another ship rapidly closing in from the rear.

We were in the nutcracker—caught in the center of the triangle with three powerful battle wagons ready to blast us wide open!

Running into the main cabin I saw the men already at their gun stations and the remainder of the crew crowded around the portholes. Jonice, although I could see the despair in her eyes, was every inch a princess as she stood surrounded by her aides. I had but time for one fleeting glance before her brave smile of encouragement sent me into battle determined to blast plenty of Martians to hell before we were destroyed.

Janito was running back and forth along the gun stations, eyes blazing, and encouraging the men with the swellest line of fight chatter that I had ever heard. I knew he'd take his share of Martians with him.

The enemy ships had now come into eye view and I took over active command. I quickly gave the men their assignments, determined to get in a few telling shots before the enemy had time to concentrate their fire.

"Keep your heads," I instructed. "Make every shot count and direct your fire at their control rooms."

I was about to give the command to open fire when the P.A. system started to sputter. The distorted noises ceased in a moment and then a guttural Martian voice filled the cabin.

"Your position is hopeless. Surrender within five minutes and you will be given decent treatment as prisoners. Resist, and you will be blown to atoms."

I turned toward Jonice in time to hear Relvon say, "But, Princess, resistance would be futile. The odds are more than hopeless. I implore you not to send men to useless deaths. I advocate surrender and taking our chances with the enemy."

I SAW the Princess' eyes sweep the room and knew her determination was wavering as she realized that death would be the only reward for battle. Keyed to fighting pitch, I was at her side in a moment.

"Princess, our chances aren't worth a plugged dime, but I didn't accept this job to come out here and surrender without pulling a trigger. We may die, but there will be a few less Martians that will need killing later on. To surrender now would place you and the highest officials of Uranus in the hands of the enemy.

"You know that you'll be used as bargaining material and that the citizens of Uranus would sacrifice everything including their Stulite resources to assure your safe return. If we have to die to save a world, then let's go out as fighting men."

I saw the indecision leave her face and her regal poise return. "Make the fight a gallant one, Captain," she said.

A lump came into my throat as I realized that I was looking at this glorious creature for what was probably the last time. Taking her hand, I pressed it to my lips and then, glancing at her saw her eyes swimming in tears.

I wheeled as Relvon, with a muttered curse, left the cabin.

"To your station, Relvon," I snapped. "This is going to be a fight for *all* of us." His eyes blazed at me with all the ferocity of a ray gun, but he stalked to his station.

Again the voice from the amplifier flooded the room. "Your time is up. I hope you will not force us to destroy you."

Throwing open the transmitting switch, I replied: "He who runs away, lives to fight another day. But, Martians, we don't give a damn for another day. So, my answer is . . ." With the downward sweep of my hand, all our guns went into action.

Hell broke loose. Our ship rocked and plunged from the recoil of our own guns and was buffeted to all angles as the enemies' ray bubbles exploded over and below us.

Our first volley had caught the ship on our left at a lucky angle, where the ray screen was weakest, and huge holes opened in its side as black smoke poured out. The other two ships had been broadside so our bursts exploding against their defense rays did nothing but make them reel and buck.

The action became fast and furious with never a pause in the firing. None of their shots had as yet penetrated our defense ray, but I noted a worried frown creasing the brow of one of the rear gunners. He continued firing, but I could see that he was in trouble. Just as I started toward him, he called out, "Rear defense ray is gone, and—" He never finished because a glancing ray shot burned through the hull and buried itself in his chest. The first man had died in the defense of Uranus.

NOW, I could see that the shock of some of our own rays had blasted portions of the enemies' defense area and that holes had been opened in their hulls. But, I could see we were in plenty of trouble. The heavier and more numerous guns of our enemy were rapidly breaking down our defense areas and more and more of their ray bursts were coming through.

The situation was fast becoming hopeless. More of our men were dropping to the floor with holes burned through them. It was a slaughter, but we had made our choice and had committed ourselves to what actually amounted to suicide. We were being slowly battered to pieces and the end could be only a few minutes away.

Suddenly a shout went up. The cruiser on our right broke into flames and then exploded with a blast that sent us spinning end over end. "At least," I thought, "We're taking plenty of company with us."

The end was near now. Only a few of our guns were firing and dead men were strewn all over the floor. In the next cabin, Jonice and a few others were giving what aid they could to the wounded. I sickened as my gaze traveled over the cabin of death.

Just as the ship staggered from a burst in the tail section, a wild, mad idea flashed through my mind. There was

one chance in ten million that it would succeed, but, we were doomed either way.

"Cease firing," I yelled. "Into the sleeping quarters, quick!"

The tired, discouraged men quickly filed into the sleeping quarters as I dashed to where the Princess and remaining men were assembled. Rapidly, I herded them all in the other cabin and in a few seconds outlined the plan that had only the slimmest chance of success.

My explanation was greeted only by silence from the tired men, with the exception of Janito, who cried, "It will work! Come on, men, we'll live to kill a million Martians."

The enthusiasm of the youngster was contagious and tired eyes brightened while drooping shoulders lifted.

"Martians," I called into the microphone, "Martians, we have ceased firing. You can board our ship." Fearfully I waited for the answer which would hold the key to the initial success of my plan.

Their ray guns ceased firing, but it seemed like an eternity before our amplifier started to buzz, indicating that they had opened their transmitter.

The same guttural voice filled the cabin. "For the destruction of two of our ships, we should blast you apart. Only because of the humanitarian intervention of Hirohito, the great Nipponese Emperor, are you being spared."

Hirohito was on their remaining craft! My head started to pound as I realized that yellow-skinned rat was almost within reach of my fingers. "If only the plan will work. It *must* work," were the thoughts that flashed through my mind.

The amplifier rattled again. "The Princess Jonice, Janito, Tamura Vlitta and Captain Lester will take your space raft and come aboard our ship. The remainder of your party will stay on your liner, in full view, until negotiations are completed. Any trickery and we will blast you without warning."

The mention of my name was a shock. How did they know that I was on board? "Damned good espionage," I thought.

"Our two rafts have been destroyed," I replied. "You'll have to send for us, or come aboard."

"Our own rafts have suffered minor damage," came the answer. "They will be ready shortly. In the meantime, your ship will remain motionless. Do not try to escape. At the first sign of motion from your ship, we will finish the job."

So far, so good. The delay would work to our advantage.

The amplifier had again fallen silent and excited conversation had broken out among the men. Janito was giving pep talks, reminding me of a football quarterback. Jonice's eyes were following me and I could see that renewed hope had given her spirits a lift. Only Relvon did not seem to be taking an active part in the conversation or discussing the plans with the other Council Members.

"Queer," I thought. "Perhaps, he's still sulking about that sock I gave him."

I didn't know how much time was left before they would have their rafts repaired and come for us. I called to the men and gave them their last instructions. I knew I was looking upon many of them for the last time as, even if the plan was successful, the toll of lives would be terrific.

CHAPTER V

Punch and Parley

INSTRUCTIONS given and repeated, the men were scattered around in

groups, seeking what rest they could before the supreme effort.

I drifted toward a corner of the main cabin, seeking a few moments silence to gather my wits for the encounter. Weariness came over me in waves as I realized the tremendous responsibilities that rested upon my shoulders.

Steeped in thought, with my head sunk in my hands, I did not hear or see Jonice approach. A soft hand upon my shoulder made me aware of her presence.

"Chris," I experienced a thrill as I realized she had addressed me by my first name—with tenderness in her voice. "Chris, if this should be the end, I want you to know now how much I have come to admire and respect you. You are a man among men—a man willing to fight and die for an ideal that he holds sacred. Some day your people will come to know what a sacrifice you made so that worlds might live."

Emotion almost overcame me, but, I managed to reply, "Princess, as long as there is justice, we and our cause cannot die." Then growing bolder, I continued. "A new world, a new life, a new love has been given to me. And, if the new love is never completely attainable, I will fight through to victory so that the remainder of my life may be spent in her services."

Completely taken aback by the full meaning of my remark, she hastily withdrew the hand that I had seized and with a murmured, "Chris, please," she ran from the room.

"A very pretty speech," a sneering voice said. Whirling, I saw Relvon standing at the other door and realized that he had been listening all the time.

Hell may have no fury like a woman scorned—except the fury of a man who has been snooped upon while opening his heart to the woman he loves. So, the smack on the jaw that I gave Relvon bounced his head against the wall with a resounding thump and he slid to the floor—out like a light.

"Here they come," several voices cried. Looking through the porthole, I saw the space raft from the Martian warship nearing our own craft.

"YOUR refusal to cooperate with us won't do you one bit of good," the Martian commander said. "It will only force us to invade and smash the people of Uranus. Play the game with us, and we will not molest its people."

Princess Jonice, Janito and Tamura all looked toward me so I took up the conversation. "Whose word do we have that Uranus will not be violated?" I asked. "And, how do we know that the promise will be kept?"

"My word should be sufficient," came the sharp reply. "But, if it will make you feel any better, I can tell you that Hirohito himself has authorized the proposition."

Desperately playing for time, I said, "We would want that assurance directly from Hirohito. We can make no deals unless it be with someone that we know has complete authority."

The Martian commander was about to make an angry reply when the door was thrown open and in walked the scrawny, yellow Jap—dressed in the uniform of Mars and wearing a chest of medals. I had all I could do to keep myself from smashing that grinning mouth.

"A cozy gathering," was his opening remark. "I trust that we shall have to do nothing that will make any of our distinguished visitors uncomfortable."

Then his eyes narrowed and his voice chilled as he added, "We have no time for useless conversation. Either you agree to allow us to land a small army of occupation while we are removing sufficient Stulite for our needs, or we

shall destroy Uranus most completely. Your answer, please."

I had purposely secured a seat facing our own space ship so that it would be possible for me to see the prearranged signal that would signify that our comrades were ready for the next step that would mean life or death for us. Just as Hirohito had finished speaking, I saw a light from our ship blink three times in rapid succession—the signal that all was in readiness and that the supposedly disabled space rafts were being launched, totally invisible against the black hull of the ship, covered, rafts and men, with black soot as they were.

I hoped that my face did not betray my excitement as I tried to gain a few moments time by saying, "Your proposition is most attractive, but, will you allow us a few moments to discuss the matter between ourselves? After all, it is a tremendous decision that we must make—a decision involving millions of people."

As I spoke I could see Janito sliding toward the edge of his seat and I knew that the alert young battler had also caught the signal that was to set off the fireworks.

Hirohito hesitated; then in clipped, cold words, "Five minutes. That is all. You have no—"

His words came to an abrupt halt as excited shouts and commands came from all parts of the ship. The blackened men on the rafts had blown open the air-lock doors and were storming through.

HIROHITO and the Martian commander whirled toward the door at the first commotion and Janito and I went into action. He shot through the air, feet first, catching the Martian squarely in the back. As the two of them went crashing to the floor, I was within inches of Hirohito who already had his ray gun half drawn. Smashing down on his wrist with the open edge of my hand, I sent the gun spinning across the room. A left to the jaw, a crushing right to the chin and another left for good measure dropped him as if he had been hit with an ax.

Turning to assist Janito, I saw that he had completed his job quickly and effectively. The Martian was stretched out perfectly motionless in a sleep from which he would never awaken. Janito had blasted him with his own ray pistol. Tamura and the Princess had backed into a corner and a quick glance at Jonice revealed a white face and heaving breast. I knew that she had had a few bad minutes when her brother and I started the attack.

Outside the cabin, the din had reached a crescendo. Ray guns were popping, clubs and other weapons could be heard smashing against walls with the duller thuds telling the story of the clubs meeting flesh and bone.

Running over to Hirohito, I slapped and shook him into consciousness. I threw him into a chair and then dashed cold water into his face to bring him out of the fog.

"Switch on your P.A. system and tell your men to lay down their arms," I yelled. And as he sat, without moving, I grabbed him by the collar and shook him like the rat he was.

Shoving him down in front of the microphone, I pushed a ray gun in his face and said, "You've got exactly ten seconds to stop that fight or stop a blast from this ray gun right in that pretty face of yours. Now get going!"

I started to count and as I reached eight, my finger tightened on the trigger. He saw that I wasn't fooling and threw open the communication switch.

With his eyes flashing wildly and the perspiration running off him, he spoke rapidly in the Martian language and

then in Japanese. Abruptly the noise dwindled and then died away entirely.

The battle was over and our mad scheme had succeeded.

Hirohito was our prisoner!

I TOLD Janito to watch him and then left the cabin to supervise the surrender and disarming of the rest of their crew. I wasn't going to take any chance of their pulling the same kind of stunt that we had worked.

After making sure that the many Martians and few Japs were completely disarmed and securely locked up, I returned to the cabin and found Janito still sitting with the ray pistol trained on our choice prisoner.

Jonice, her face wreathed in smiles, arose from her chair to greet me.

"Chris, you were superb," she said. "We all owe our lives to you."

At that moment, with her eyes smiling happily at me, I would have given most anything to take her in my arms and feel her cheek against mine. But, restraining myself, I modestly replied, "We were fortunate that they became careless. But, I'm afraid that our casualties were heavy."

Her face saddened. "Every life lost is like a dagger in my heart, but, I know that they had their choice; they would have asked for no better ending to their lives than to die in the defense of the land they love."

Jonice paused, and through the open door her eyes seemed to be seeking someone in particular. "Where is Lyonul? Certainly he will want to congratulate you on your wonderful accomplishment."

"Here it comes," I thought. "She'll really take me apart if I tell her that I clouted that oily-tongued boy friend of hers." I was wildly thinking of some plausible excuse for Relvon's absence, when—

"Chris! Look out!" yelled Janito.

Hirohito, taking advantage of a moment's carelessness on the part of Janito, had snatched the ray gun. And, as I ducked low, the bolt went over my head and smashed into the wall. I launched myself through the air in a tackle that crashed him against the wall and sent the gun clattering to the floor, but not before his second shot burned through my shoulder.

A red haze of hate blinded me as my fingers curled around the throat of this oriental murderer. I could feel many hands pulling at me as my fingers gouged into his throat and I heard his breath coming in gasps. He struck and clawed at my face making the blood run down, but my pressure did not relax an iota until every ounce of breath and life had been choked out of him.

Completely exhausted by emotion and effort, I allowed friendly hands to pull me from the body of the dead Hirohito. Utterly worn out and with my knees quivering, I turned to face my friends.

If I had expected to receive praise from the Princess for eliminating one of her most dangerous enemies, I was sadly mistaken. The look of horror on her face was startling and in her eyes was something akin to revulsion as she cried, "Chris, Chris! Why must you be so brutal? Has killing become so much a part of your nature that violence must always control your brain and hands?"

My energy was spent; my control was gone and with the pain from my shoulder coursing through my body like liquid fire, I felt the room start to spin and saw the faces in front of me start to shift and blend together.

Hysterically, and with my voice mounting with each throb of pain, I almost screamed, "Kill? Kill? What did I kill? A beast, I tell you—a stink-

ing scavenger who never should have been born.

"You've never seen the men who returned from Bataan. You've never seen the men out of his concentration camps. You've never seen wounded, helpless men, women, children massacred by his hordes of savages.

"And now I'm brutal because I did what any American would have given ten years of his life to perform? Well—"

But, now I was done in. Weakness came over me in waves and the floor and ceiling started to push together. The room which had been slowly spinning before, now started to whirl madly as a curtain fell slowly over my eyes. Faintly, as from miles away, I heard a voice cry, "He's wounded!"

Then I mercifully blacked out.

CHAPTER V

The Army of Uranus

I AWAKENED surrounded by the gleaming white of a hospital room. Slowly at first, then more rapidly as my mind cleared, the chain of events passed in review before me. Then suddenly realizing the urgency of time, I sat up and a groan escaped me as pain flashed through my shoulder.

"He's come out of it," a happy voice said. Across the room I saw Janito and Tamura Vlitta.

Janito hastened to my bedside, grasped my hand and said, "Chris, this is the happiest moment I've had in five days."

Tamura, who had followed at a more leisurely pace, placed his hand upon my shoulder.

"You had us worried for a few days, my boy, but I knew that you were too healthy a devil to let it keep you down." I knew the welcome relief in his eyes could only mean that the kindly old man had been more than a little worried.

"Yes," added Janito, "You were sick enough to rate plenty of attention. The wound itself wasn't so bad, but you kicked up a fever that would have melted an iceberg."

"What about Princess Jonice," I asked. "Has she been here?"

The answer came slowly from Janito and I could see that something was troubling him. "Yes, she's been here, but, of course, you were unconscious." He paused; then continued, "Look, Chris, you've got yourself in rather a jam with Jonice. I believe that she finally saw the justice of your killing Hirohito; however, I'm afraid that Lyonul has painted a pretty black picture of the beating you gave him on the space ship. What actually happened? If you'll tell me the story, I'm sure Jonice will listen."

"Thanks, Janito, but it's something I really prefer not to talk about. I probably should have controlled my temper, but that guy just rubs me the wrong way. It will probably straighten out some day, but if it doesn't, well—" I shrugged my good shoulder.

Abruptly changing the subject, I asked, "When am I going to get out of here? There are a million things to be done and the time must be getting short."

"Have a little patience," interjected Tamura. "You are still very weak and if you leave too soon, you will be back here in a hurry. But, truthfully, the doctors have said you can leave just as soon as you are able to be up and walk around a bit. After three days, I would say."

THE three days dragged like an eternity and there were only the visits of Janito, Tamura and several others to relieve the montony. Jonice did not come again, nor did I receive a message

from her. That hurt me as nothing ever did before.

The day I left the hospital, I asked Janito to show me around the plants manufacturing our fighting ships and to take me on a tour of inspection of our military forces.

The factories were a beehive of industry. They were turning out thousands of the gleaming, metal fighters. A surge of relief went through me as I realized that I was to have at my disposal the most deadly efficient weapons that could be manufactured.

We visited the various fields where I saw thousands of ships lined up and ready for action. Janito, I had noticed, had been strangely quiet when it seemed that my enthusiasm should have awakened a similar reaction in him.

Finally, when our tour had been completed and we were on the way back to the palace, the reason for his unaccustomed silence came out.

"I hated to build you up for a big letdown," he said. "But, you must know something before you get too optimistic.

"We have plenty of fighting ships and the facilities to manufacture them in unceasing thousands. Better ships than the Martians ever dreamed of, even though not as large. Our ships are constructed in one-tenth of their best production time.

"But, we have just about one thousand men who are capable of operating them!"

That was a body blow. Ships to burn and a paltry force of a thousand men to fly them. "So," I thought. "This is the army of Uranus."

THE next few days were hectic ones as I dug into files and records of arms and ammunitions and attempted to lay the skeleton outline of an army. The task at times seemed almost hopeless but I kept at it.

In my few leisure moments, I tried many times to see Jonice. Never did she allow me the opportunity of seeing her alone. When I did see her, in the presence of others, she was always polite, always pleasant, but the warmth was missing completely. She had reverted to the formal "Captain Lester." Relvon had really done his work well.

After days of battling with the military problems of Uranus, I came to a desperate conclusion and requested Tamura to call a meeting of the Council.

The Council chamber was filled to capacity, even the Princess Jonice was present. Tamura quickly called the meeting to order explaining at the same time the meeting had been called to discuss military matters, and therefore the progress of the business would be turned over to me.

Arising from my chair, I plunged directly to the point.

"From a military viewpoint, our situation could not be worse. We have ships to fly and no men to fly them. We have guns that are unequaled and no men to fire them. We have cities to protect and no way to protect them.

"The enemy is powerful, has excellent equipment and a large, well-trained army. They have bided their time, knowing our weakness. They are now about ready to take the offensive.

"Gentlemen, to save Uranus, we must attack the enemy at once!"

A storm of protest broke from all sides and many remarks regarding my sanity were hurled at me. Finally, grabbing Tamura's gavel, I pounded violently until a semblance of quiet was restored.

"To wait for the enemy to attack," I continued, "would amount to suicide. We cannot hope to meet them on equal terms once they launch their attack. The only effective weapon we have is

the element of surprise. They are not expecting an attack and will not be prepared for it."

Once again a babble of voices started, but quieting them with a sweep of my hand and pounding the gavel, I went on, "We must adopt a style of attack similar to that used by the Allies in the last war on Earth. With special forces trained in the methods of destruction, they landed at unexpected points, destroying factories, power stations, bridges and other vital points. This sapped the strength of their enemies.

"Fortunately for us, most of the Martian factories are in a central industrial district. If we are to defeat the enemy it will have to be done on their own ground, destroying their facilities for manufacturing weapons of war. I, therefore, propose to organize a commando force to strike and defeat the enemy before they invade Uranus. It is a desperate chance—but, it is our only chance."

The room was deathly silent as I finished speaking and I could see that at least I had convinced some of them that the plan was plausible; that we would stand no chance of victory if we were to wait for the enemy to attack us.

Then, much to my surprise, Relvon arose.

"Captain Lester has suggested the only possible course open to us. Waiting will bring certain defeat. To strike now is our one possible chance."

I CERTAINLY had not expected support from Relvon, but I must admit that he weighed the balance in my favor. Many of them remained dubious, but for the most part they went away convinced that surprise was our only ally.

I remained in the Council room after all had gone. I wanted to be alone, to think over the rash plans to which I had committed myself and a nation. The responsibilities were heavy upon my shoulders and no one save the youthful Janito seemed capable of sharing them.

Deep in thought, I did not hear her approach and was startled to hear Jonice's voice, saying, "I thought I would find you here, Chris. Today, you looked so careworn, so fatigued, and so alone that I could not resist coming to you.

"Tell me, Chris, is there anything that we, or I, can do to remove some of the tremendous problems you are carrying with you?"

The nearness of her charged my being with an intense longing. Could I have but touched her hand, or the lovely black hair that fell in soft waves over her shoulders, I would have been satisfied. But, even that I could not do.

"No, Princess Jonice," I replied. "I only ask for your comradeship and understanding. I have done nothing that should cause you to avoid me. As far as Lyonul is concerned, I'm sorry for what happened, but, I'm sure that any spirited man would have done the same thing under the same circumstances."

Her eyes were vaguely troubled as she seated herself on a lounge and motioned me to sit beside her. Her voice was soft and filled with emotion as she commenced speaking. "I do not want you to be hurt, Chris, anymore than you have been already. Your actions when I am near, the manner in which you look at me and the way you speak, tells me more clearly than words what your heart feels for me."

There was no use of me denying what was true, but, not wishing her to read the thoughts that were probably mirrored too apparently in my eyes, I fastened my gaze on the floor while she continued speaking.

"I have come to admire you and respect you for what you are. And in my

heart I know that I could never earn the love of a finer man. But, Chris, some things are just not meant to be." She hesitated while she reached out her hand to place it on mine; then went on. "I am afraid that this is just one of those things that is not meant to be.

"I am telling you these things now so that when your work here is concluded, there will be no bitterness between us and so I will not be blaming myself for something that could have been avoided. Am I right, Chris?" she concluded.

I arose and looked directly in her eyes. "I can't give up as meekly as all that. Anything that I've ever obtained was only through my willingness to fight for it. I'll fight for you in the same manner, and, if I lose the battle, I'll be a good sport about it. But, I will go on fighting until then."

Gracefully retiring from the room, she paused in the doorway and looking over her shoulder at me commented, "Now that you know, the fight can do you no harm."

CHAPTER VII

The Hour Strikes

THE following two weeks were the busiest of my life.

The plans that I had prepared were gone over time and time again. Weaknesses were eliminated and points altered.

Five hundred ships, each carrying one trained man and fifty raw recruits, were to participate in the invasion. Each ship commander was rehearsed many times on the specific assignments for his crew of commandos. Maps were studied to the minutest details; photographs of landmarks and objectives were scrutinized. At the end of a week, the Martian industrial city of Thiol was as familiar to them as the cities of Uranus.

The invasion force was equipped with our most destructive demolition weapons and men schooled and drilled as intensively in their uses as was possible in two weeks. These men were the pick of the Uranians; strong, spirited fellows who took to their assignments as if they had been practicing them for months instead of just a few days.

Tamura, Relvon and even Janito insisted that I was making a mistake by limiting the size of the invasion fleet to five hundred ships. They advanced many arguments trying to convince me that the entire weight of the effective fleet should be thrown into the battle in an attempt for a quick knock-out of the Martian industries and battle fleet.

I had to admit that many of their arguments were logical, but, I was playing a hunch and keeping an ace up my sleeve. The ace I would reveal only if it became necessary. Finally, recognizing that their arguments were not swaying me in the least, they gave up the efforts.

The invasion fleet was to attack in three waves from three directions with Relvon leading one group; Lenti Roitan, the fleet commander, heading the second; and, of course, I would command the remaining division. Janito was to be on my flagship, as second in command of my group.

The night before the attack, I was summoned to the private palace quarters of Princess Jonice.

Her beauty was breathtaking that night. As I entered her apartment, she rose to greet me, extending both hands, which I took in mine. She was dressed in shimmering ivory matching the creamy perfection of her skin and contrasting vividly with the deep, deep blue of her eyes and the jet blackness of her hair. I could do nothing but stare at

this vision of loveliness.

"Tomorrow will be a busy day for you, Chris, and I know that I would have little chance to see you.

"I know too well that the fate of Uranus depends upon the success of the invasion. I also know how little chance there is of its success and of the frightful loss of lives that our forces will suffer. Oh! Chris," her voice faltered and choked with emotion. "I pray that your life will be spared and that this horrible nightmare will soon be past." Her eyes were swimming in tears as she finished.

With far more confidence than I felt, I tried to reassure her. "We will succeed because we must succeed. Even if thousands of men fall, if my own life is lost in the attempt, the sacrifice will be worth while as millions of other humans will have been spared.

"But, in the event that this is a final good-bye," and I hesitated a moment to gather courage, "this is my way of saying it—my way of saying I love you." The next moment I had her in my arms, her lips soft against mine.

For a few moments time stood still while the pressure of her lips answered mine and the warmth of her body caused my heart to pound.

"So, my Princess, until we meet again." As I stopped at the door for a final glance at her, I saw that she was weeping, her face buried in her hands.

CHAPTER VIII

Commandos to Mars

EVERY preparation had been made. The fleet was to take off at a carefully planned time and if everything went as figured, we would be attacking Mars' industrial city just as its dawn was breaking.

I was sitting in my space ship cabin going over the plans for the fiftieth time when the buzzer on my visa screen sounded. Throwing open the switch, I saw Relvon in a hospital room, his leg in a cast and his head swathed in bandages.

"Good grief, man," I exclaimed. "What's happened to you? What have you done?"

"I had a nasty fall," Relvon replied. "Tripped on a flight of steps. It looks as if you will have to count me out, Lester. I just don't have the strength to get out of this bed. I know," he said sincerely, "this puts you in a jam and I would give anything if it hadn't happened."

"All right," I answered. "This makes it a bit tougher, but we'll make out okay. Take care of yourself." And I broke the connection. I still didn't like the man, but I did feel sorry for him and I had to admit to myself that he had been cooperating in every way possible.

Who was I going to place in charge of the third attacking force? Janito? He's impulsive, but he's a fighter and a leader and the men will follow him! Fitting action to the thought, I called for him immediately.

"Janito," I said as he entered the cabin, "Relvon's had an accident. Tripped on the stairs, he said. He's in the hospital—a broken leg, I believe. You'll have to take over his duties. Think you can do it?"

Janito stared at me rather queerly for a moment before replying. His answer, however, was determined, confident. "Of course, Chris. I am just as capable as Lyonul, and what's more," his hesitation gave emphasis to the words, "I love a fight."

The implication of his words did not click at the moment so I merely replied, "Okay, fellow, the job is yours. You'd better get set—we shove off in ten minutes."

He paused briefly to shake my hand and then with a hearty, "Good luck," departed to board Relvon's ship.

A few last minute check-ups, a brief word with the navigator and we were ready to depart.

I flashed the pre-arranged signal, our motors hummed into life and we launched into space to be followed by the rest of the fleet. The invasion of Mars was under way.

MIDWAY between Mars and Uranus, the fleet split into the three divisions that were to make the attack. At a given signal they changed directions and each task force went its separate way.

The hours dragged. I paced my cabin ceaselessly and inspected our equipment at least ten times. It was the waiting that was hard, that keyed my nerves to the breaking point.

To pass the time more quickly, I pored over the invasion maps time after time. It was then that I came to a very fortunate decision.

My map showed that the area over which my force had to pass and land was heavily fortified and thickly dotted with enemy air fields. Of course, this had been taken into consideration when the plans were finally approved, but now I thought I saw another route, a longer one, but easier for the attack. If we were to approach Mars from the east, passing first over its immense desert region, we could arrive at our objective without first passing over dozens of Martian cities. Thus, we stood a better chance of reaching there with my force intact.

I instantly passed the word to the navigator, contacted Janito and Lenti Roitan on our directed wave transmitter which made it impossible for the enemy to intercept the message, informing them of the change in my route and the time of the actual attack. Both of them thought the idea was good.

I consulted my watch every few minutes and couldn't believe that the time was moving so slowly. Finally, the navigator entered and announced that we were but an hour from our destination. I made one last tour of inspection, spoke a few encouraging words to the men and then returned to my cabin to again contact Janito and Roitan.

Their images flashed upon the screen immediately and I had them repeat their assignments just to be sure that there would be no last minute slip-ups. After breaking off the conversations, I kept the visa screen trained on their attacking units so that I would be able to follow their progress every minute of the time.

Just as the darkness started to lift, we spotted the great wastes of the Martian desert. Simultaneously, Janito and Roitan reported that they had sighted their objectives. The big moment was at hand.

I knew that it would take us at least a half-hour to pass over the desert and reach our objective. Therefore, I glued my eyes to the visa screen to watch the opening shots by the ships of Janito and Roitan.

I saw their ships pass over the Red Ocean and with bated breath watched as the fleets started preparations for the bombing of the Martian flying fields.

Hell erupted. Before they could reach their first bombing objective, blasts from ray guns started to burst all around them. Three ships in Janito's command exploded; more were hit and their noses turned toward the surface of Mars. Roitan's group ran into the same reception and ships were exploding or hurtling earthward at a startling rate.

Suddenly the sky around them was filled with hundreds of Martian fighting ships. Through the visa screen I could

see that our ships were hopelessly outnumbered. They had flown into a trap and were being shot down like clay pigeons.

But many of them had by this time reached the initial objectives and atomic demolition bombs started to burst on Mars. Then the remaining crafts started to hurtle earthward as the landing areas came into sight.

For a brief moment Janito's image appeared on the screen.

"It's a trap, Chris. They were expecting us. We'll give them all we can, but it looks hopeless. See if you can get out of this before it's too late." Then his furrowed features broke into a grin and he yelled, "But it's a hell of a swell fight." His image vanished as he broke the connection.

I DIDN'T have time to think about his words because now our own ships were descending rapidly. Our part of the fight was about to begin. Beneath us, our demolition bombs started to burst and huge fires were breaking out.

Not a Martian ship had appeared to challenge us. They had all been concentrated at the other points of attack and at the point at which my unit was supposed to have appeared. So, it *was* a trap, and only the last minute change in routes had prevented us from getting the same terrific blasting. Thousands of our men were dying because of a tip-off. I ground my teeth in helpless rage. How could they have known?

Our ship landed, and the men armed to their teeth tumbled out the doors. All around us the other ships were landing and spilling men out in rapid succession. Now Martian fighting ships appeared and men began to fall as blasts from ray guns, and bombs, burst around us.

The men sped to their various assignments. Huge explosions rocked the earth and showers of steel and masonry erupted into the sky. Martian soldiers were now flooding out of small flying transports and pitched battles were being fought everywhere.

Slowly, still superior in numbers, we fought our way into the central industrial district and factory after factory crumbled to ruins as the demolition squads went into action. Some of our ships which had not yet landed were unloading hundreds of bombs which were exploding with terrific concussion.

Men were falling all around me as the Martians began to get reinforcements. The advance continued, but our losses were growing and the Martians continued to arrive in an endless stream. Smoke, flames, and explosions testified that my men were fighting like demons and that the men of Mars were going to pay a high price for battle.

Then from the west I sighted the remnants of Janito's fleet fighting their way toward us. Roitan's men were coming up from the south and temporarily the Martians were in a gigantic pocket and they were falling like leaves in a storm.

The vast industrial city was now a mass of flames, but the fight was almost over. The tide of the battle turned as the Martians poured in reinforcements and soon we were entirely ringed by thousands of fresh Martian troops who were pouring in their ray shots with devastating effect. Our invasion force had now dwindled to a mere handful and we were about at the end of our rope.

I'll never know how I escaped with my life. A half-dozen times men in front of me fell. Three times men crossed in front of me taking a ray blast that in each instance would have spelled my finish.

The Martians were slowly pressing us back against the river bank with their

encircling troops coming in closer every moment. Every place I looked I could see dead soldiers, most of them being the men of Uranus.

Suddenly I realized that further resistance was futile, that I was subjecting my men to unnecessary slaughter. We had destroyed what we could and there wasn't a chance of breaking through the Martian ranks to create further havoc. There was nothing left but surrender.

So, I gave the word and all up and down my men ceased firing and laid down their weapons. Stepping into the open, I waved my white handkerchief and the Martian firing slowly died away.

A CONFERENCE seemed to be going on between the Martian officers. Taking a few moments respite, I walked among the men to praise them for the amazing fight they had put up against overwhelming odds.

"Chris!" I whirled as I recognized Janito's voice and saw him on the ground.

I went down on my knees beside him and he whispered, "Is it all over, Chris? Is there nothing else we can do?" What a fighting spirit he had, still looking for a way out, still wanting to fight with a gaping ray wound through his side.

"It's all over, Janito," I answered. "They've trapped us and we can't continue the fight with the few men that we have left.

As I talked I was busy dressing his wound, trying to stop the flow of blood. "Our men were magnificent," I continued. "Their fight will never be forgotten by the people of Uranus and," I added significantly, "the Martians will never forget it either."

"They were expecting us, Chris. They were ready for us. Someone sold us out and I know who it was. Oh, what a fool I was not to have suspected him." In his anger he started to prop himself up on his elbow and then sank back with a groan of pain.

"It was Relvon!" His voice was choked with pain and anger but he continued: "He's fooled all of us. Listen closely, Chris, because I'm getting pretty weak."

He was fighting to retain consciousness and for a moment or two I thought he was going to black out, but he managed to hang on and his voice became a hoarse, tense whisper.

"He didn't want to take that space trip to Earth and went only because Jonice insisted. I thought that it was because he was afraid—that he was a coward."

Janito was gasping now and his face had a deadly pallor but he did not spare himself as he went on: "He knew our ship was going to be attacked, but he couldn't get out of the trip without arousing suspicion."

His words began to come more quickly as he felt his strength fading. "His accident—all a fake. On my way to the field—half hour before he called you—I saw him go in the back entrance of the hospital. He was walking—without help.

"When you told me he had been hurt, I knew that he was lying, but again I thought that he was afraid to fight—that's why I didn't say anything to you. I just couldn't imagine he had turned traitor.

"You've got to get out of this—you must escape. You've got to warn our people—you've got to kill Relvon. You *must* save Uranus." His fighting spirit finally failed, his body went limp and he faded into merciful unconsciousness.

"You," a rough voice said as a heavy hand clamped down on my shoulder. "Come along with me and instruct your

men to stay as they are. Any suspicious moves and we'll finish them off."

I GAVE my men a few instructions and wearily followed the Martian officer through the remnants of my invasion army. My heart was heavy as I saw death all around me.

I was stumbling along not caring where I was being led when I was roughly shoved inside a doorway. My captor said, "This is where you stay."

Coming out of my daze, I looked around and saw that I was inside a Martian jail, a huge building heavily barred and guarded. Quickly, I was led to another officer, evidently one of a higher rank. He barked, "Put him in the cell with the other dogs."

I was led away into the inner regions of the prison. We came to a stop in front of a large cell in which I could see a number of other prisoners. A guard came, carrying a chain two or three feet in length, with a handcuff on each end. I started to protest as they were being placed on my wrists and received a stinging slap across the mouth as my reply. The cell door was thrown open and I was pushed in.

Immediately the other prisoners started toward me and I saw that they were all wearing the chains. Then with a shock that almost staggered me I saw that one of the prisoners was General Hammond. I couldn't believe my eyes. I couldn't understand how the man who had acted so suspiciously on Earth could possibly be a prisoner on Mars.

I thought that if it hadn't been for his pig-headedness neither he nor I would be in our present plight and that the United States would have already been preparing for the attack that was almost sure to come.

"So, General Hammond," I greeted him, "my story was fantastic, was it? Or, am I only dreaming that we are on Mars and you and I are both prisoners in the same cell?"

His forehead creased in a puzzled frown for a moment and then cleared as he said, "Take it easy, Lester. I don't know exactly what you're talking about, but I have an idea that it is something that I can explain quite easily."

"You can never explain," I heatedly replied, "how an officer of the U. S. Army—"

He cut in: "Look, Captain, I've been up here a prisoner for almost a year. Does that mean anything to you?"

"A year!" I exclaimed. "It wasn't two months ago that you wanted to have me courtmartialed for trying to warn you about this. Now you try—"

Again he interrupted. "I see it now, Lester. Look," and he indicated with a sweep of his hand, "there are ten men here, all officers of our army. And each one of them has been replaced at his post by a Martian. They are superb masters of disguise—those devils—and they've done it so effectively that even these men's mothers wouldn't be able to detect the deception. Does that explain everything?"

I WAS so stunned for a moment that I could hardly talk, then I finally managed to reply, "Good grief, General, it seems almost impossible, but if what you say is true, then the United States is in immediate and terrible danger. Why," I continued, "those imposters can knock the props right out of all our defenses and the fight will be over before it actually gets started."

"That's right," he agreed. "But what can we do about it?"

"We've got to make a break and make it quick—now. You have to get back to Earth with the warning and organize the army for the greatest battle in history. For, if Uranus falls, the

United States is next."

The General then introduced me to the other officers and I quickly brought them all up to date on what was happening. I told them about our attack and how we had succeeded in doing terrific damage in spite of the fact that the Martians knew we were coming.

After an interchange of remarks, I said, "If we don't get out of here tonight, there is no use of getting out at all. Uranus must be warned in a matter of hours."

No one made any suggestions and I was quick to grasp the fact that if any plans were made, I was going to have to be the one to make them. I paced back and forth and was growing desperate when the plan was finally born. Another chance in a million, but it was worth trying. Quickly I called the men around me and explained.

Most of them were frankly skeptical, but all agreed that they could suggest nothing better. And as one of them put it, "I'd rather die once now, than die a million deaths waiting for them to invade the United States."

Just then the cell door was thrown open and several guards entered, one of them beckoning to me and indicating that I was to follow them.

CHAPTER IX

Hitler

WE PASSED through several corridors and my eyes were busy registering every detail and noting the various guard stations. We left the building and entered an adjoining one.

At last my escort stopped in front of a door that was guarded by several heavily armed Martians. A few quick words from one of my guards and they indicated that I was to enter the room and wait. For what I was to wait, I didn't have the faintest idea.

One of the door guards stayed in the small room with me and all my efforts to get him into a conversation went unheeded. So I just had to wait for the unknown.

After what seemed hours, another door was opened and again I was told to pass through it.

Two men were seated at a table. I had eyes only for one—Hitler. The man who had murdered millions—the man who wanted to murder more millions—was sitting in front of me and I couldn't place a hand on him because four guards were standing with ray guns ready for action.

The second man at the table was apparently a high-ranking Martian. Later I found that he was the Martian Emperor.

Hitler's eyes burned into me and I could see that he was seething with anger.

"So," he barked. "You are the Yankee pig who led the attack on Thiol?"

"Yankee pigs feasted well in Berlin," I replied. "What's the matter, Adolph," I continued, "are you looking for another dose of the same Yankee medicine?"

"Silence!" he thundered. "I'll have your tongue cut out for another remark like that."

Another nasty crack was on the tip of my tongue but I caught myself when the thought occurred that they might throw me into a solitary cell and spoil any hopes for escape. So I decided to play smart instead.

"Okay," I answered. "I'll be a good little boy. What do you want from me?"

"Information," Hitler replied. "How many ships did you bring with you. How many ships are left on Uranus? Give me truthful answers and you will

receive decent treatment. If you cooperate with us, you personally will have nothing to fear from the New Order."

"Still talking about the New Order," I thought. But aloud I replied, "All right, I know when I'm licked. And I'm smart enough to recognize that your plans have gone too far to be balked by a few unprepared nations. Here's what you want to know."

I told him that five hundred ships had attacked Mars, practically the entire Uranian fleet. He seemed to swallow it, hook, line and sinker.

With the old Hitler ego he said, "It will be only a few days and Uranus will be completely smashed. In three weeks I will be dictating the peace terms."

I almost smiled when he said that, as I recalled the similar promises he had made to the German people about Moscow and Stalingrad. "I hope history repeats itself," I thought.

Hitler asked me a few more questions which I answered as evasively as possible. He then ordered me returned to the cell.

NIGHT was falling as the guards escorted me back to the cell. My companions were already eating their evening meal when I returned. While I ate, plans for the escape were discussed.

The rest of the evening dragged along and tension in the cell gradually mounted as the men realized the hour for the break was drawing near. At last the lights went out and the Martian night guard took his station in front of the door.

The men retired to their respective cots and a blanket of silence fell over the cell. But, I knew the thoughts that must have been running through their minds as they realized that this meant freedom—or death.

When I coughed twice—the signal that the fun was to begin—the fellow on the cot next to mine began to moan; softly at first and increasing in volume with each breath.

By the light from the corridor I saw the guard turn his head at the first sound. Then as the moaning continued he arose and peered into the cell.

"What's the matter in there?" he called.

"This man is sick," I called back. "You'd better take him out of here or get someone to take care of him." With bated breath I waited to see what the guard would do.

With a muttered curse he unlocked the barred door and swung it closed behind him as he entered the cell. Threading his way past the cots in the semi-gloom he approached our decoy.

"What's w r o n g with you?" he growled as he stood over the man's cot. The answer came so low that it was almost inaudible to me.

"Stop that groaning and speak so I can hear you." As he said the words, the guard unconsciously bent over the man to catch the reply.

That was the moment the decoy had been waiting for and like forked lightning his hands shot into the air and the chain on his hands circled the guard's throat. Instantly crossing his hands in front of him he applied terrific pressure on the guard's neck. A frightened, choking gasp came from the guard.

At the first action, I leaped from my cot and pinned the guard's arms to his side before he could reach for his ray gun. The other men remained absolutely quiet on their cots as any concentrated attack would have made enough racket to bring the other guards down on our heads.

Rapidly the guard's struggles grew

weaker and finally he went limp as life left him. Pressure on the chain was maintained for a few extra moments just to make sure that the job was complete.

Slowly, quietly, the body was allowed to sink to the floor. Then taking the keys from his pocket I rapidly removed the chains from my wrists and then unlocked the handcuffs from the decoy.

"Boy, when we get back to Earth I'll hire you as my chief bodyguard," I whispered to him in jocular praise. His only reply was a sickly sort of a grin and I knew that the nasty job he had accomplished was not sitting any too well.

QUICKLY I passed among the men, removing their chains and cautioning them to remain just as they were until we were ready for the next step. Although quick action was necessary, one hasty move would upset the apple-cart.

One of the others, acting according to plan, had already removed his own clothes and was now replacing them with the ones stripped from the guard. As soon as he had finished, he stepped outside the cell and seated himself in the chair that had been occupied by the guard.

I knew that around the bend in the corridor two more guards were stationed and that another guard would be found outside the door that sealed off the corridor from the exit. If we could dispose of those guards, our next objective was the general sleeping quarters of the other prison guards.

Whispering to the men to remain silent, I left the cell and joined the fake guard. Proceeding according to plan he began walking rapidly down the corridor, deliberately scuffling his feet so that the other Martian guards would be certain to hear him. I was sure that they would suspect nothing if they heard someone approaching them in an ordinary manner. I followed him closely.

As he rounded the corner of the corridor, one of the other two guards called, "You'd better get back to your post before—" He never finished his words as the ray gun taken from the dead guard in our cell sent a perfectly aimed blast through his head. His companion never had a chance—a ray bolt crashing through his skull before his hand had darted even half-way to his gun.

"Good going, fellow," I whispered. "Now we've got to get those uniforms off them."

This grisly job was completed quickly and he hurried back to the cell with the uniforms while I stood guard in the corridor in the event that another guard happened along.

Soon I heard the muffled noises of my fellow prisoners approaching and as they rounded the corner there were three of them dressed in Martian uniforms with ray guns swinging in readiness in their hands.

Rapidly and quietly we neared the solid iron door which was now the only barrier between us and the sleeping quarters of the prison staff. Nerves were tensed with suppressed excitement and by the desperate energy reflected in the faces of the men, I knew that it was going to take a lot of Martians to stop our dash for freedom.

The solid, heavy door was bolted from the outside, but I hesitated for only a second before rapping briskly on it with the butt of a gun.

"What do you want?" was the muffled query.

"One of the prisoners just got some kind of a fit, and we're bringing him out," I shouted back.

Immediately I heard the rasping of

the steel bolt and the door swung open. The guard had barely time to make more than a startled exclamation before he was swarmed under by a half-dozen husky Yanks. And they completed the job with usual Yankee thoroughness.

The next step which we had anticipated as the worst proved to be the easiest, but the grimest.

The door to the sleeping barracks was completely unguarded and a quick glance revealed fifteen Martian soldiers asleep. No mercy would have been granted had we been discovered—and no mercy was shown. The fifteen men soon were fifteen corpses and not one of them ever knew what had happened.

The balance of us then donned Martian uniforms, opened the door leading to the outside and unchallenged passed several groups of Martian soldiers standing in front of the building.

THE havoc of the day's battle was apparent. Fires, still out of control, were burning fiercely. Dead and wounded were still being removed from the streets; and in the fields beyond we saw huge numbers of damaged and destroyed Uranian and Martian fighting ships. Rapidly we walked toward the ships, stopping now and then to bend over a soldier or making pretenses of other types of inspections.

A small, but rapid type of Uranian ship that did not seem badly damaged caught my eye and we casually made our way toward it. While the others paused in front of the ship apparently engaged in earnest conversation, I jumped aboard and praying harder than I ever had in my life, made a quick check-up. Everything seemed okay, but knowing little about the machinery, I could only hope for the best.

Signaling to the others, I waited impatiently while one by one they casually detached themselves from the group and sauntered aboard.

At last they were all in their places and with a fervent last-minute prayer, I threw the switch all the way open and was almost thrown to the floor as the motor charged into life and the ship hurtled into space.

Pursuit was impossible as the void swallowed us. We had completely fooled the Martians and were on our way to Uranus.

CHAPTER X

Untriumphant Return

AFTER the first wild rush of exultation had passed and mutual congratulations were flung back and forth, the reaction set in. Waves of weariness surged through me and my hands lay listlessly on the controls of the ship. I had been without sleep for almost twenty-four hours and was at the point of exhaustion.

The disastrous news that I had to report gave me a hollow sensation and I didn't know how I was going to tell Jonice about Janito. I knew that she would prefer him dead than in the hands of the Martians, but I could not even give her that slim measure of comfort. Janito had still been living when I was forced to leave him.

Then like a flash the thought of Relvon entered my mind. Weariness was forgotten as rage burned through my body. My hands trembled with an eagerness to be at his throat as I thought of the thousands of Uranians that had paid with their lives for his treachery. Relvon was going to pay dearly, too.

General Hammond and his men were jubilant. The thought of returning to the States and exposing the Martian

plot had filled them with a new zest. I was mightily relieved that the United States would now have time to prepare for the invasion in the event that Uranus fell. But they could not prepare in time to come to our assistance.

Then the moment I had been putting off became imperative. I had to contact Uranus and tell the details of our defeat.

I set the automatic pilot and made my way to the radio room. I could have used the hook-up in the pilot cabin, but too many of the men were crowding in and out. And, I wanted some privacy for the conversation.

For a few moments I debated who on Uranus I should contact and then decided that Tamura Vlitta was the logical choice. I rapidly made the necessary adjustments on the transmitter and then set the flash signal going. I kept my eyes glued to the visa screen as I did not want to talk to anyone other than Tamura. If he was not there at the time and anyone else answered the signal, it was my intention to break the connection.

But in a few moments the visage of Tamura appeared on the screen.

"CHRIS! Chris, my boy. Where are you? What has happened? Everyone here has been nearly mad with anxiety. Tell me quickly, is the news good or bad?"

The lines of worry were deeply etched upon the old fellow's face and I knew that the news I was going to give him would make him heartsick. But it had to be done and I gave it to him as briefly as possible. I did not tell him about Relvon. Not because I did not trust him, but merely because the man was so frank and honest that I doubt if he could disguise his feelings and keep silent in the event that he met Relvon before we arrived.

"Tamura," I concluded. "You are to say nothing to anyone about our return. It is vitally important that not a soul learn of our escape until we arrive."

I could see the words of protest shape themselves upon his lips, so I hastily interjected, "Tamura, please believe me —all is not lost. I frankly did not expect this defeat, but I did prepare for it. Therefore I assure you it is urgent that you maintain a complete silence."

He agreed, but I could see that the old man was terribly shaken and that he felt Uranus was doomed. Well, maybe it was, but not before Hitler and the Martians paid a terrible price for victory.

The rest of the trip was completely uneventful. Despite the fact that I felt pretty nearly dead from lack of sleep, I had to stay at the controls as I was the only one aboard who understood the operations of the ship and space navigation. Whenever I felt that sleep was about to overcome me, I had only to think of Relvon to bring myself back to wakefulness.

I had told Tamura that we would land at a certain out-of-the-way field and requested that he meet us there. Just as dawn was beginning to break, the field was sighted and I landed the ship on its very outskirts. Tamura had sighted us as we were circling for the landing and had hurried across the field to embrace me as I stepped through the door.

Quickly I introduced Tamura to the American officers and proceeded to the palace. We entered a little used entrance and went to my quarters.

My return to Uranus in the cold, bleak dawn was anything but a triumphant reception.

I TOLD Tamura how urgent it was that the American officers return to

earth immediately and he promised that a space ship would be in readiness to leave that afternoon.

Then drawing Tamura into a small side-room, I asked him, "You have told no one of my return?"

"Not a single person, Chris. But why such complete secrecy?"

"I have good reasons, Tamura, as you will find out later. Right now it is important that I get a few hours rest so I will be in condition for the Council meeting you are going to call for this afternoon."

"For what purpose, Chris?"

"For the purpose in which we are all vitally interested — that of saving Uranus. Time is the most important factor, Tamura, and we cannot delay —it would be fatal."

Tamura shrugged his shoulders. "All right, Chris. My confidence in you is still strong, but I guess it is just typical of the aged that makes them question instead of seeking action."

I placed my arm around his shoulders. "Retain your confidence in me just a bit longer, Tamura. And now, I have just one more favor to ask of you." I hesitated as his eyes searched mine and then resumed, "See that the Council members gather in a large room of the hospital in which Relvon is confined. It is important to my plans that Relvon be there for the meeting."

"But his injuries—" Tamura protested.

"I don't believe that his injuries will prevent him from attending. Please, Tamura, do as I ask you and you will soon see what will happen."

A puzzled frown creased his brow and I could see the confusion in his eyes, but, he merely nodded his head, patted my hand and departed.

As soon as he had left, I crossed the room, opened the switch on the visa screen and in a few moments faced the image of Haley Rol, who was second in command to Lenti Roitan. His chin dropped in astonishment when my own visage was reflected upon his screen.

"Captain Lester! We had given up hope. What has happened? Where is the fleet? What—"

"This is no time for questions Haley. Prepare for action on the attack plan that we discussed. Recall all men to their stations, cancel all leaves. The fleet departs for Mars at sunset."

I saw excitement fill his face and cautioned, "Haley, you've got to keep your wits about you. If you fall down on the job, Uranus falls with you. And what's more, you are not to tell anyone that I have returned, nor are you to divulge the destination of the fleet. Understand, Haley?"

"Perfectly, Captain. You can depend on it that your orders will be followed."

"Good," I responded. "If you should want me for anything it will have to keep because you will be unable to contact me for some time. Make the decisions yourself, Haley. You can do it." Then I broke the connection.

MY NERVES were so taut that I found it impossible to snatch the rest that I needed so badly. I wandered into the sleeping quarters of my fellow Americans in the hopes that some of them might be awake. It was futile, as they were all sound asleep and I didn't want to awaken them.

I paced my suite waiting impatiently for the Council meeting and kept my mind occupied by going over each step in the plan that meant victory or slavery for Uranus.

Finally the time arrived and once again I went to my fellow Earthmen to bid them goodbye. General Hammond and several others were already awake, so I told them their departure plans, wished them luck and left for

my meeting with the Council and — Relvon.

I slipped out of the palace as unobtrusively as possible, but was seen by several people. I didn't particularly care since the news would soon be public property.

Arriving at the hospital, I stationed myself in a remote, dark corner where I could command a view of the entrance. One by one the Council members started to appear and soon they were all there except Tamura and Jonice.

As I saw them approaching, I walked toward the door to be there to greet them when they entered.

Tamura saw me almost immediately, but Jonice had almost passed me by when she came to a startled stop. Her look of blank astonishment turned to genuine relief.

"Chris!" she exclaimed. "You have come back."

I was too filled with mingled emotions to reply and could only stand and gaze at her.

Tamura gave us both a long, searching glance and then left us saying something that I'm sure neither one of us heard. I may be mistaken, but I could swear that he winked at me as he passed.

Without a word I took Jonice's hand and led her to my little, dark corner. I opened my arms and she came quickly, willingly. For a few moments I forgot my weariness and the bitterness of defeat. And as my lips found hers the aching longing that had been in my heart was stilled.

The moments were all too brief when with a little sob she gently pushed me away.

"Chris, my dear," she said, and her eyes were bright with unshed tears. "This is madness. We must not hurt each other by giving way to our emotions. You must remain the soldier, Chris, and I must remain the Princess."

"Why is it madness, Jonice? Is it wrong for two people to love each other? Oh, can't you see that you are allowing your mind to rule your heart?"

Her little hand sought mine and her troubled eyes fastened themselves on my face. "If it were only that simple," she said. "I must be brutally frank with you, Chris, and I know that it is going to hurt you."

"My marriage to Lyonul was proposed by the Council. They regard him as a natural leader and because of his popularity with the people of Uranus, they would not look with favor upon another choice."

"That's so much bunk, Jonice," I angrily replied. "Marriages, my sweet, are not in a council chamber."

And then I added in a grimmer tone, "And, perhaps the Council will soon change its mind about Lyonul."

WITH an evident desire to change the subject, she said, "We have forgotten the most important thing. I know the news must be bad, Chris, otherwise there would have been little need for all this secrecy. Tell me everything. I can stand the bad news better than the suspense."

While we strolled slowly toward the meeting room, I told her the whole story of the fight and hesitated only when I had to tell her about Janito. She was game to the core and beyond a slight tremble in her chin and the quivering of her lips she took it like a soldier.

"And is this the end, Chris? Is the fight for Uranus all over?"

There was no accusation in her voice; no questioning of my tactics; only a pity for the people whom she thought would soon be living under the yoke and whip.

"No, Jonice," I replied. "I think this is only the beginning. That's the reason

we have assembled the Council. For the sake of the people and the country you love, support whatever I say at this meeting."

I knew from the look that she gave me that there would be no question of her support.

Then we stepped into the Council meeting. The babble of voices died to a sudden silence as the Council members stared at me.

Tamura did not give them time to start throwing individual questions. He promptly called the meeting to order.

I sat staring at Relvon who was comfortaby seated in a wheel chair, his leg in a cast and his head still tightly bandaged. Then I was sure that Janito had been correct for the man looked far too healthy, his color too good, to have been the victim of an accident that was bad enough to give him such injuries.

Tamura was a wise and kind man. He relieved me of the task of reciting the events of the defeat and gave a glowing account of the damages we had inflicted upon the Martians. Then he asked me to take over the meeting.

"Gentlemen," I started, "the fight is far from over. We have lost every man of the invasion force. We have lost every ship that participated. But we haven't yet lost the battle.

"Hitler believes that practically our entire fleet was destroyed. I made sure that he got that impression.

"Therefore, we must use immediately the one trick that I have kept in reserve. We must strike now—tonight with another invasion fleet that is ready to depart on a moment's notice. Even Hitler will not suspect that we could muster enough power to strike again so quickly.

"This time we will concentrate on knocking out their space fleet. We have destroyed a great deal of their manufacturing facilities and if we are successful in this attempt, they will never be able to recover from the blow."

I waited while the expected storm started blowing about my head. Many of them were convinced we were as good as defeated and there was no point of again sacrificing thousands of lives. I patiently waited hoping the storm would abate, but it continued, even gained strength.

Finally Relvon's voice made itself heard above the rest. "I am again forced to agree with Captain Lester. It is our only chance and even if it fails we will have done enough damage to further delay the Martian attack on Earth. It will give them time to prepare their industry for an offensive that will crush the Martian threat to civilization." He stopped and glared around the room as if he were daring anyone to challenge his logic.

It was sound thinking I had to agree and its effect on the Council produced an amazing effect. But, Relvon had stepped right into my trap and I was all set to spring it.

"THANK you for your support, Lyonul," I said. "I'm sure that all our Council members must agree with you.

"And to show you how grateful I am for your encouragement and support, I am going to give you the honor of commanding the first ship that will land upon Martian soil."

Relvon blanched and gave me a startled glance. "But, that is impossible. I am in no condition to command a fighting ship."

I walked off the platform from which I had been speaking and slowly approached Relvon. My eyes did not leave his as I progressed the length of the room. As I had left the platform, I could see from the tense attitude of Tamura that he expected some-

thing to happen.

Stopping in front of Relvon I said, "Take off that cast."

"Have you gone completely mad, Lester? My leg is fractured."

My blood had reached the boiling point and I knew that it was going to be impossible for me to keep my hands off the treacherous snake.

The others had gathered around in astonished wonderment and Jonice, still on the platform was standing on tip-toe with alarmed concern written all over her face.

"Relvon," I grated between clenched teeth, "I am going to call in a doctor to remove that cast. Any objections?"

With a loud curse he lifted himself awkwardly from the chair and in his hand was a ray pistol that he had magically produced from underneath the blanket that had been covering his legs.

"Everyone back," he roared. "Up against the wall."

As the Council members backed slowly to the wall, he kicked savagely against a desk with his cast-heavy leg. The cast shattered almost magically, fell in fragments to the floor. Then he turned to me with a fiendish grin.

"You are pretty smart, Lester, but not smart enough. I give you credit for seeing through my game, but you made one very bad mistake.

"You forgot that when the Martians found out about your escape that it was possible for them to inform me about it by radio. That was very stupid, Lester, for a military genius." His voice and words dripped contempt.

At the moment I wished that the ground would open and swallow me. Even a ten-year-old boy would have thought of that and now we faced disaster because I had blundered.

"I am going to kill you, Lester," he continued. "You have gotten in my way once too often. If you have anything to say, you had better say it now as I am leaving in a moment. And, when I leave, you'll be dead!"

THE GLEAM in his eyes told me that the man was mad with hatred and that the finger trembling upon the trigger would soon send a ray bolt burning into me.

But, everyone had forgotten Tamura. Standing slightly to the side he was not in direct view of Relvon. Unobserved he picked up a thick book and now with a sudden motion he hurled it at Relvon. Relvon caught the motion out of the corner of his eye and whirling to meet what he thought was an attack, presented a perfect target for a hard right hand smash to the jaw. He got it and went tumbling to the floor—with me right on top of him.

I made a lucky grab and caught hold of his gun hand and exerting every bit of strength I had started to bend it back. Relvon fought like the mad man he was. His free hand beat savagely against my head and face and time after time his knee came up into my stomach.

Finally with a violent jerk he hurled me to one side and scrambled to his feet. But, before he had time to level the gun, I was back at him. With both hands I grabbed his gun hand despite the terrific punishment I was taking from his free hand. Slowly, I forced his wrist back, trying desperately to swing the muzzle toward his own body.

My strength was ebbing rapidly from the rapid blows and with a mighty last effort I succeeded in bending his wrist completely. With a howl of pain and terror from the danger he recognized he gave one convulsive jerk of his hand. That was his last moment of life.

His own finger pulled the trigger that sent a ray bolt burning into him. His

whole body stiffened, then slid to the floor—dead.

Exhausted and breathing heavily from the tremendous effort, and the punishment that I had taken, I glanced around the circle of Council members. Blank astonishment was still written on every face and they seemed rooted to the spots on which they were standing.

Jonice was a picture of frozen horror. Her eyes were wide and staring as if she could not comprehend what she had just witnessed. I started to walk toward her—and then, with a gasp, she turned and fled from the room.

I was about to follow her when a hand was laid on my shoulder. It was Tamura.

"Let her go, Chris. The shock was too much for her. And, your greatest battle is yet to be fought."

My head still reeling from the fight and the rapid movement of events, I stumbled from the room without another word.

CHAPTER XI

Return to Mars

WHEN I reached the field, all was in readiness for the invasion. Haley Rol had done his work well.

Haley had seen me approaching and walked forward to meet me. We proceeded immediately to my ship to which Haley quickly summoned all the squadron leaders.

This time our plan of attack was to be entirely different. The fleet was to split up into a series of squadrons, each one attacking a different Martian field. The object was complete destruction of the Martian fleet.

Little time was wasted in preliminaries. When I was sure that each squadron leader knew exactly the point he was to attack, I sent them back to their own ships with instructions that the fleet would take-off in ten minutes.

Everything would have to move with the precision of clock-work. We had to strike hard and fast and in typical commando fashion; all surviving men and ships were to withdraw exactly one hour after the start of the attack.

Without further ceremony, I flashed the signal and one after another the battle craft of Uranus plunged into space.

I knew that I was going to require some rest to stand up under the ordeal that was to come, so leaving instructions to be awakened when within two hours of Mars, I threw myself on a couch and fell into the first sleep that I had had in more than two days.

It seemed that I had just closed my eyes when I was awakened by a violent shaking.

"Two hours from our objective, sir." It was the navigator and I realized with a shock that I had been asleep for close to six hours.

Feeling greatly refreshed, I immediately contacted the various squadron leaders to see that they were all in readiness and that all ships had so far made the journey safely.

As I walked through my ship and into the galley to obtain a bite to eat, I felt the quiet air of determined confidence that seemed to prevail in every man. Their conversations were casual, but, in each one, I could see the eagerness and urge to get into battle. A cheerful salutation was on each pair of lips as I passed.

The men of Uranus were prepared to fight—and die.

THE dash through space had been timed perfectly. Just as darkness was beginning to lift, the Martian landscape became visible and our own objective came into view. We were at-

tacking the space ship field nearest to Hitler's headquarters.

The nose of the ship tipped steeply and suddenly and the first demolition bombs went crashing into hangars and barracks.

Not a Martian ship was in the air to greet us. They had really been caught with their pants down.

Fires were springing up as if by magic and violent explosions sent wreckage hurtling skyward. Miles away, on each side of our ship, I could see other fires raging and I knew that the other portions of the fleet had planted their bombs of revenge.

Time after time our ships circled the attack area and new explosions were sending blankets of smoke soaring upward.

Now a few Martian ships were coming up to challenge us, but they were being knocked out of the air like clay pigeons. But more kept coming and soon the air was filled with ships flashing over and under us and ray guns vomiting discharges of death.

Broken ships, Martian and Uranian went spinning to the ground or exploded in mid-air. My ship was struck several times, but, never in a vital spot. We kept plunging into combat while our gunners exacted a terrific toll from the enemy. We were not escaping unscathed, as I saw many of our men lying dead or wounded on the floor of the ship.

Rapidly the battle swung to our favor and then according to plan, a group of ships, mine included, went into a steep landing glide, while the others remained aloft to give us coverage.

Volley after volley of ray bolts poured into our ranks as we spilled out of the ships, but, never once did my men falter. Straight into the face of the most intense firing they marched, firing their guns as rapidly as they could pull the triggers.

The solid front of the Martian troops gave way under the relentless attack and then they broke into a panic-stricken retreat as we drew into close quarters. The Martians had no appetite for this kind of fighting.

The resistance that met us at the edge of the space ship field was smashed by a determined charge and with jubilant yells, the men began to apply the torch and send ray bolts crashing into the hangars that were still standing.

Up above, the battle was still raging and I could see that the Martian space fleet had again received reinforcements. Probably from a field that was unknown to us and therefore, not charged for attack. But the newer ships and more powerful ray guns of Uranus were blasting the Martian ships out of the sky. We were suffering, too, because as I looked I saw some of our ships falter in flight and then plunge earthward to a final landing.

Although our ranks had thinned, the men were still fighting with a fury that was sweeping the Martians before them. Then from out the smoke and flames, I saw the administration building—*Hitler's headquarters!*

RALLYING a few hundred men around me, each begrimmed with sweat, dirt and blood, we started the onslaught. The men had tasted victory and were not to be stopped. Yelling like a band of wild Indians they quickly closed in on the building and the Martian defenders were soon destroyed. And, in just a few minutes we stood triumphantly in front of our objective.

I took a handful of men with me, the other men surrounding the building so that not even a fly could have passed undetected.

Praying that the skunk was still there, that he had had no opportunity

to escape, we entered the building and started the search. The few Martians that were inside offered no resistance, just stood and stared at us dumbly as we passed.

Room after room was searched and I was beginning to curse the fates that had permitted him to slip through our fingers. Suddenly, an excited yell echoed through the corridor.

"There he is!" Swinging around in the direction of the call, I saw a Uranian soldier pointing into a small room at the other end of the long hall.

The blood roared into my head and my hands began to tremble as I realized that the end was in sight. Victory, and Hitler dead! I was determined that never again would he become a prisoner of war.

Motioning the men away, I entered the room and closed the door behind me. And, there on the floor still trying vainly to conceal himself under a desk was the very unheroic figure of Adolf Hitler.

"This is it, Adolf," I said. "Your little party is all over and it's time for you to take a nice, long nap. That is," I added, "If there's any such thing as sleep in Hell."

Slowly, quaking with fear and his face the color of putty, he came out of his hiding place and dragged himself to a standing position. His eyes were watering, his chin quivering—a pretty picture was the father of the New Order. A contemptuous hatred filled me as I gazed upon the murderer of millions.

I placed the ray gun I was holding on the table and then drew my other one from my belt.

Pointing to the one on the table, I said, "Use it yourself, Adolf, or a firing squad will do the work for you." I started to back out of the room and then concluded, "And that's more of a break than you ever gave anyone."

Still keeping the gun pointed at him, I backed out the door and then motioned the Uranian men who were clustered about to move out of range of the door. If Hitler tried any mad last tricks, I didn't want any of my men to get hurt.

I listened intently for a few moments and as I heard nothing, I was on the point of kicking the door back when the sullen, deadened plop of a ray gun sounded from the room.

Cautiously kicking the door open, I peeped in and saw him stretched on the floor, a ray wound through his head.

The mad beast was dead by his own hand. There was something satisfying in that.

As I turned to lead my men from the building, a faint roaring started in my head and I became conscious of a biting pain in my shoulder. I suddenly discovered that the old wound had been opened in my shoulder, probably by a glancing ray bolt.

I needed air badly and got out of the building as fast as my shaking legs would carry me.

All the fighting had ceased and survivors of our fleet circled victoriously in the air.

That was the last I remember because a black wave of unconsciousness engulfed me.

CHAPTER XII

The Last Ship

I CAME to in the now familiar surroundings of a hospital room.

Sitting on my right was the ever faithful Tamura. And, on my left, the handsome Janito.

"Janito!" I yelled. "How did you get here?"

Totally absorbed in some papers he had been reading, he all but fell off his

chair at the sound of my voice. Tamura, after a visible start, just sat there, his old wrinkled face a blanket of smiles.

"Chris, you old softie," Janito said as he grasped my hand. "We've been sitting here for a week waiting for you to sit up and take notice.

"A week?" I echoed. "How long have I been here? What about your own wound? How did you get here? What about the battle on Mars?"

"One question at a time," laughed Tamura. Then he added, "You better tell him everything, Janito, before his curiosity gives him a relapse."

Janito taking up the thread of conversation said, "You blacked out on Mars. Remember, Chris?"

As I nodded in assent, he continued, "Well, your men brought you back and for two weeks, you were more dead than alive."

"But, my wound wasn't a bad one," I protested. "It was only a shoulder wound, and I didn't even realize when it happened."

"It wasn't the wound that caused the trouble," Janito replied. "You were suffering from complete exhaustion and they could not check the fever. But when you started to mend, you came out of it very quickly.

"A band of our men found me in one of their prison hospitals and brought me back, too." He grinned. "I guess my young hide is just too tough for an ordinary ray gun."

"Janito, I know that we must have been successful, or we wouldn't be here talking together. But, tell me, did we knock them out completely?"

"Completely, Chris. They haven't enough ships left to attack a good-sized formation of ducks. And we're going to police them so that they will never again have an opportunity to build a war machine."

"Uranus owes you a debt that she will never be able to repay," Tamura interjected. "Without you, Chris, Uranus would now be a shambles."

I was saved the embarrassment of further compliments when the door swung open and Jonice walked in.

Without another word, Janito, with a wise grin, and Tamura, with a knowing smile, arose from their chairs and walked out.

"Hello, Chris."

"Jonice." I didn't want to talk. I just wanted to look at her—the most beautiful woman that I had ever known.

Quickly she crossed the room and took both of my hands in hers. I thrilled to the core, just as I always did whenever she touched me.

"Chris, I am completely happy now. You are almost well; the fighting is finished; and Uranus has been saved. It is all over, now."

"It is not all over, Jonice. For us it is just the start. The start of something that I felt the very first time I saw you."

Slowly, sadly she shook her head. "No, Chris, it cannot be. I tried to warn you of that long ago.

"I prayed that this wouldn't happen. For my part I tried to fight against the emotions I felt every time I saw you. But it did not work, Chris. I love you just as you love me. And, now we are both going to be terribly hurt."

"But, Jonice," I protested, "I thought that Relvon was the only stumbling block. Well, he's—"

"I know, Chris. But, still it cannot be. Let me try to explain."

SHE had been standing all this while and she then drew a chair close to the side of the bed. Again her hand stole into mine.

She continued: "You must return to your own, Chris. You would never

be completely happy here. The people are different. Our customs are different and you would soon yearn for your old friends and the free, easy ways of the Earth peoples."

"That is so silly, Jonice. For goodness' sake, with the space ships that Uranus has developed, travel and commerce between the earth and Uranus will soon be a daily event."

"That's just what I am trying to tell you cannot happen.

"Listen," she continued, "while you were lying here ill, the Uranian Council passed a law specifying that there must be no commerce or migration between Earth and Uranus."

I started to give a heated reply, but she silenced me with a slight pressure on my hand.

"Please believe, Chris, when I say that they really believed they were doing the right thing, and, in a large measure I had to agree with them.

"So much greed exists on Earth. There are so many men that would stop at nothing to gain wealth or power. There will be more men like Hitler and Hirohito—and more wars.

"We do not want even a single germ of greed or treason to again blight our civilization. There you have the reason, Chris."

Turning, she glanced out the window. Then, pointing, she said, "Look. Do you see that single space ship in that field beyond the hospital?"

As I nodded, she continued: "That is the last space ship that exists on Uranus.

"Fifty ships returned from the Martian invasion, Chris. We have destroyed the other forty-nine. The one remaining will return you to earth and then be destroyed after it brings its crew back to Uranus."

"All right, Jonice. Is that the way you want it?"

"Not the way I want it, my dear. It is just the way it will have to be."

AFTER several more days I was well and strong enough to leave the hospital.

I spent most of my time in the company of Janito and Tamura, taking in the sights that I had been too busy to observe before. They were very weak substitutes for Jonice, whom I longed for every moment of the time.

Jonice and I saw each other frequently, but never alone. That would have been bad although many times I felt like throwing discretion to the winds and holding her in my arms just once again. I knew by the way in which she looked at me that her suffering was as great as my own.

Finally the day of departure dawned.

A great crowd was around the field to witness the take-off. And the cheers that greeted me as I put in my appearance told me that I would never be forgotten by the people of Uranus.

The state officials including Tamura, Janito and others of the Supreme Council were assembled on an elevated platform close by the space ship that was to carry me back to Earth. Its crew was drawn about the platform as a guard of honor.

I felt all eyes upon me as I walked up to the ship's port. But, my eyes were only for Jonice. She was nowhere visible.

I heard not a word of the many speeches and was only dimly conscious of the medal that was pinned upon my chest.

Then with a roll of the drums, the honor guard came to attention. With a supreme effort I started the walk up the steps and into the space ship.

For a long time after the ship passed into space, I sat staring out of the port at the receding bulk of Uranus. Then I

heard a sound behind me. I turned, then gasped.

"Jonice!"

"Yes," she said simply.

I was floundering in bewilderment and surprise. "But how . . . what . . .?"

"A long time ago, while observing a certain woman on Earth through our television, a significant phrase became as much a part of our Uranian life as it is of Earth's.

"'Whither thou goest, so go I' was what that woman said."

I got tremblingly to my feet, folded her slim form into my arms as she came willingly forward.

"They are beautiful words," I said tenderly. "The most beautiful words that have ever been spoken."

THE END

VIGNETTES OF FAMOUS SCIENTISTS

By ALEXANDER BLADE

Pierre Louis Dulong

This famous chemist was the co-discoverer of the chemical constant known as the "atomic heat figure" of all elements

PIERRE LOUIS DULONG, French chemist and physicist, was born at Rouen, France, on February 12 (or 13), 1785. After acting as assistant to Berthollet, he became successively professor of chemistry at the faculty of sciences and the normal and veterinary schools at Alfort, and then in 1820 professor of physics at the Ecole Polytechnique, of which he was appointed director in 1830. In 1823 he was elected a member of the French Academy of Sciences. He died in Paris on July 18, 1838.

In 1811 he discovered nitrogen trichloride; during his experiments serious explosions occurred twice, and he lost an eye, besides sustaining severe injuries to his hand. He also investigated the oxygen compounds of phosphorus and nitrogen, and was one of the first to hold the hydrogen theory of acids.

Dulong's important research work in physics was on heat and was carried out in conjunction with Alexis Therese Petit (1791-1820), the professor of physics at the Ecole Polytechnique. In 1815 they made the first accurate comparisons between the mercury and the air thermometer. The first published research, 1816, dealt with the dilatation of solids, liquids and gases and with the exact measurement of temperature, and it was followed by one in 1817 in which they showed that Newton's law of cooling was only true for small differences in temperature; and one in 1818 on the measurement of temperature and the transference of heat, which was crowned by the French Academy.

Dulong is chiefly known in connection with the physical law which, in collaboration with Petit, they discovered, and which is known as the Dulong and Petit law. It runs as follows:

"The product of the specific heat of any element, when in the solid state, and its atomic weight, is (approximately) a constant."

The inference from this law—which is universally accepted, but not yet explained—is that the atomic heat of all the elementary substances is practically identical.

Each of 92 elements that have so far been discovered, has a property which is called its atomic weight. It is expressed by a number, which may either be a whole one, or one with a fraction.

Thus, the atomic weight of oxygen being called 16 for the purpose of establishing a unit, that of carbon is 12; of gold 199.2; of lead 207; and of uranium 238. These figures represent the relative weight (not the actual) as compared with that of the unit element oxygen, of the smallest amount of each that is capable of existing as a fixed quantity in a chemical compound or, as it is called, the atom.

Common table salt is a compound of the metal sodium with the gas chlorine, and is expressed in the language of the chemist by the symbol "NaCl"; in which the "Na" stands for the sodium (formerly known as natron) and the "Cl" for chlorine. The union of the two is expressed numerically by adding together the atomic weights of sodium (23) and chlorine (35.5), making the atomic weight of the compound 58.5. Pure water, which is a compound of the two gases hydrogen and oxygen, is symbolically expressed as "H_2O," and numberically by the figure 18, which is the sum of 2 unit weights of hydrogen and 16, the unit weight of oxygen.

Another property, possessed by all the elements, is known as their specific heat, by which is meant

the amount of heat required to raise the temperature of any one of them one degree Centigrade under certain specified conditions. This is different for each of the elements, but has a much smaller range of values. Thus the specific heat of hydrogen—lightest element—is 3.4090, while that of platinum—heaviest—is 0.032.

Dulong and Petit's discovery was to the effect that if the atomic weight figure of any element is multiplied by its specific heat figure, the product in all cases will be approximately a constant, that is, an identical figure. It is 6.4 and is called the atomic heat figure.

In 1830, Dulong published a research, undertaken with Arago for the academy of sciences, on the elasticity of steam at high temperatures. In his last paper, published posthumously in 1838, Dulong gave an account of experiments made to determine the heat development in a chemical reaction, together with the description of the calorimeter he employed. He was so badly supplied with apparatus that he spent practically all his wealth in providing what was necessary for his researches.

Boltzmann

Developer of kinetic theory of gases and molecular mathematics

LUDWIG BOLTZMANN, Austrian physicist was born in Vienna on February 14, 1844. He was educated at Linz and then at Vienna, where he obtained his doctorate in 1867 and was appointed assistant in the Physical Institute of the university. In 1876 he was appointed professor at Graz where he stayed until 1891, when he went to Munich. He held the appointment of Professor of Physics at Vienna, except for a short period in 1904 when he went to Leipzig, from 1895 until September 5, 1906 when he committed suicide at Duino.

Boltzmann's most important work was on molecular mathematical physics; and on the development of the Kinetic theory of gases.

The molecule is defined as the smallest particle of any given kind of matter which retains the properties of the whole of it; as, for example, a molecule of water, of sulphur, of table salt. In the first and last of these instances the molecules are compounds in each case of two elements, into which they can be readily resolved by purely chemical methods; whereupon, their appearances and properties as water and salt disappear, and they then give evidence of their presence by exhibiting the appearance and properties of those elements (hydrogen, oxygen, sodium and chlorine) into which they have been decomposed. But sulphur is itself an element, and its molecule consists ordinarily of a union of two of its atoms, but under certain conditions may consist of six or even eight of them. Thus, if the sulphur molecule is broken up it still remains as sulphur.

Molecules of all kinds, and under normal conditions, are constantly in motion. Those of a gas move back and forth in rectilinear paths which are long as compared with their size, and were it not for the gravitative action of the earth they would fly off into space and disappear. The length of their paths is determined by the number of them existing in any given volume, which varies in the case of each known gas, and also with the external pressure under which it may be.

In liquids the molecules move about in all sorts of ways, very much like those of a bunch of live angle worms, and so are able to conform themselves—as a mass—to the shape of the vessel in which the liquid is contained.

In a solid they are believed to be pressed so closely together that a new force—that of cohesion—comes into play. Cohesion is perhaps simply another word for the gravitative action which, according to the Newtonian laws of matter, every particle exerts on every other particle. These particles in a solid mass cohere so firmly that more or less force is required to separate them Nevertheless, even then, it is believed that each molecule is in a state of intense vibratory motion back and forth along an infinitely minute path. If the temperature of the mass rises, these paths become a little longer, and exhibit the change of condition by the phenomenon of expansion. On the other hand, decrease of temperature results in contraction, as the effect of the shortening of these paths. At the absolute zero of temperature it is believed that all vibratory motion ceases.

It was into the field of these phenomena that Boltzmann, equipped with high mathematical ability, made deep exploration, using data already well demonstrated in the science of mechanics to light his path. For a time it was thought that he had secured some results of importance. But since the announcement of the quantum theory of Planck these expectations are not so strong, and some revision appears to be inevitable.

Boltzmann's first paper, published in the *Wiener Berichte* (1866), was on the second law of thermodynamics; this was followed by three papers (1868, 1872 and 1892) on the partition of energy. These papers attempted to put on a more satisfactory basis the work started by Maxwell; the second paper contained what is now known as Boltzmann's H-theorem; and in 1877 he began to apply the theory of probability to it.

Boltzmann wrote a number of papers on the integration of the equations of molecular motion, on viscosity and diffusion of gases, on Maxwell's electromagnetic theory and on Hertz's experiments. He also gave a theoretical proof of Stefan's law for the energy radiated by a black-body.

THE MAP OF FATE

By Cpl. DONALD BERN

TOMORROW morning's papers will carry news of events that will startle and brighten the world. Two hours ago I stuck the map pins, the little green-headed map pins, into Sergeant Garry's map of the world, and now I am waiting for the dawn with an eagerness that makes me tremble, waiting for news of the great victory. Besides me, on a crude table constructed out of boxes, are the green and brown map pins, and the maps, that Garry used in this part of Guinea when the Japs were so close we could smell them.

We were a small company of Americans ordered into the Gaiato area to protect an advanced base. We had our position on the side of a small ridge. The Japs held all the thick jungle terrain south of us. That is, all but one small trail up which our supplies reached us. For a month the Japs had been trying to take this lifeline, knowing we would then be cut off completely.

One morning, after a particularly heated battle, Sergeant Garry crawled up to my foxhole. Japs hidden in the jungle below whipped a few shots at him. The bullets made a nasty whining sound.

"What's up?" I asked nervously. I could see the worry on Garry's thin, mud-smeared face. His blood-shot eyes met mine.

"The Japs got up Eagle Peak last night," he breathed.

It hit me hard.

"Eagle Peak!" I croaked. "Hell, they can lob shells across at us . . ."

Garry nodded, scraping his pointed chin on the soggy ground. "That's right," he muttered soberly. "I don't see how they did it— Anyway the captain's going to take a gander at the map. Care to come along?"

WITHOUT these carefully marked maps Yanks might walk into traps—so they had to be right! But were they?

It was a crazy thing to do; but I stuck a green pin on Jap-held Eagle Peak

My jaw dropped a little at that. Leaving the foxhole was taking unnecessary risks—people got killed that way—but puttering around with Garry's maps was my main diversion. Garry, as operations sergeant, was in charge of various maps. Maps of the immediate fighting zone. Maps of Europe, Asia and the world. He used green map pins to indicate allied territory and brown ones to show where the enemy stood. I found it extremely interesting to move these pins day after day as battle lines shifted.

"Go ahead, I'll follow you," I replied to Garry's invitation.

I WAITED until the sergeant had moved off about ten yards and then squirmed out of my foxhole and wriggled over the soggy earth to the command post. The command post was just another hole in the ground, fairly large, with a camouflage ceiling of green shrubs. With a grunt I slipped into the small opening after Garry.

Captain Hanely, his lean back to us, was bent over a map tacked to a thin wooden frame. It was evident from the slight gestures he made that something puzzled him. He muttered, "Damn!" under his breath and spun about to face us. A gray stubble of beard covered his face; his eyes were red-rimmed and tired.

"Garry," he said softly, coldly, "someone's been in here and fooled with this map." Suddenly, his attention switched to me. "Cramer, did you move any pins?"

I gulped. "No sir. Not for a few days, anyway."

"What's the trouble, sir?" Garry inquired.

"It beats me!" Captain Hanely exploded. "I can't figure it out!" He pulled a handkerchief from his pocket and wiped the streaming perspiration from his face. I guessed he was choosing his next words. Slowly he stuffed the damp handkerchief away in his pocket.

"Look," he began, "none of our men could have known the Japs took over Eagle Peak. Even I didn't know until five minutes ago. *Yet someone has already moved a Jap pin over Eagle Peak on the map!* Now how the hell could that have happened?"

His eyes darted back and forth between Garry and me. I stood stupidly, my lips hanging open a little. My heart was thudding heavily. Our silence seemed to infuriate him. His thin lips jerked a moment before the words came out, "Probably just a silly error on your part, Garry. If you're going to be careless with these pins you might just as well move them blindfolded!" With a quick, vicious motion he snatched a brown-headed pin from its small cardboard box and jabbed it vigorously into the map. "You can go now!" he ordered.

At the exit I stopped a moment and looked back. The Jap pin seemed to quiver on the map.

Outside, I asked Garry how he figured it. He shook his head helplessly. "Forget it," he muttered. Which I at once proceeded to do. Some Japs had spotted us and thought we were clay pigeons. On all fours I scrambled to my foxhole and dived in. Sometimes only the quick survive. I pumped a few shots into the jungle for luck and then opened a can of rations which I consumed with a few swallows of hot water from my canteen. The firing settled down to an occasional sporadic burst.

THE following day started out very much like its predecessor. Dawn brought a renewal of activity on both sides. It was just before noon that the

really bad news became known to us. The Japs had finally cut our only supply line. They were firmly entrenched on both sides of the trail and nothing could get through. The men looked at each other with dead eyes. This was what we had been afraid of, and it had come true. I saw Garry slithering over the ground to the command post and decided to follow him.

Captain Hanely sat with a very peculiar expression on his face. He looked up at Garry. "Sergeant," his voice jerked oddly, "the identical thing has happened again. Someone has already moved a Jap pin to cover the trail. Whoever it is seems to know in advance just what the Japs are going to do!"

Garry gaped but was silent. I thought back a moment. "Sir . . ." I began, "if you'll recall, you jabbed a Jap pin into the map yesterday, left it there. It may be that quite by chance, you placed it on the trail. . . ."

Captain Hanely stared at me. "A coincidence, eh?"

"Yes sir."

"Well, maybe so," the captain admitted. He stood up, went to the map. "We're in one hell of a situation, men," he sighed. "We've got enough rations on hand for another day. After that . . . well, figure it out yourself." He ran a finger over the detailed map. Our position on the ridge was indicated by a green pin. The enemy was directly below us and in position to outflank any attack we might decide to make.

Captain Hanely was still staring at the map when Garry and I quietly stole out.

IT'S no fun fighting Japs and its worse on an empty stomach. We took stock of what rations we had and decided that by doing a whole lot of stretching we could make it last three days.

Bean, of communications, slapped me on the back and laughed shrilly. "Well, what are you fellows so sour about? That's almost a can of rations a day for us. Things may improve in three days!"

"We'll probably be a lot hungrier," I muttered darkly. A rifle cracked somewhere in the jungle and I ducked involuntarily. Garry pitched forward on his face and lay sprawled. I crawled to his side, turned him over carefully. His eyes stared at me blankly. Timothy, the medics man, hurried up and made a quick examination.

"He's dead. It got him smack over the heart."

"He's lucky; he's lucky!" Bean chanted eerily.

I hit him on the side of the face. "Shut up, damn you!" I said hoarsely.

"Get back to your foxholes," Captain Hanely rasped, "you know better than to bunch together like this!"

We scattered.

According to plan, we consumed our rations over a three-day period, but the third day found us weak and starved. The Japs, knowing our situation, were prepared to wait for us to make a break, then mow us down.

That night I slowly munched on the last hard biscuit I had carefully stored away. Ants had shared the biscuit with me but that didn't matter. The air was heavy and damp, difficult to breathe. My eyes hurt from peering into the darkness. At times like this a man will do a lot of thinking. A lot of desperate thinking. I don't know what made me think of the pins again, but suddenly in my feverish mind certain things became clear. Startling clear, so that I trembled with the knowledge that had suddenly become mine.

Should I go to Captain Hanely and tell him what I knew? No, he would think me . . . insane. I decided to see the thing through myself. Quickly

then I finished the biscuit, wriggled out of my filthy abode and made my way back to the command post.

IN DOING this I took the risk of being shot at by our own men. At night, anything that moved might be a Jap and worth taking a shot at. I kept close to the ground, careful not to make a sound.

As I had anticipated, the command post was deserted. I crept inside, covered the opening carefully with a piece of canvas, struck a match. It flared weirdly against the earth walls. I stepped to the map and without hesitation removed the Jap pin stuck over our supply line. Then I retreated to my foxhole to wait for the morning.

I was not surprised when the dawn revealed that the Japs had abandoned the area. The jungle was silent and devoid of Japs. Supplies could be brought in.

"This is the best break yet," Captain Hanely muttered aloud, "but I can't for the life of me see why they would pull out just when they had us cornered."

"The important thing, sir, is that they *did* pull out!" Bean said fervently.

Captain Hanely smiled and shook his head. "It will always be a mystery to me," he said.

I heard all this and smiled to myself. Later in the day supplies were brought up and we ate like lions. It was no longer necessary to stay crouched in foxholes. Gradually the fever that had possessed my brain left and I laughed at myself for my insane action the night before. Oh, I had been crazy to think that merely removing the pin could influence the Japs! It was only a coincidence that the Japs had pulled out . . . as I had pulled the Jap pin out of the map. A coincidence, nothing more.

But I could not help thinking about it.

In several days the map and the pins drew me as a magnet. I waited until the captain had left and then entered the command post. I was alone. I saw that Captain Hanely had placed additional maps on wooden frames. These had been propped up against the earth walls. A map of the world covered one entire side.

However, my attention was directed to one map alone. *The* map. I could not get my eyes from it. Should I again attempt this madness? Once and for all, quiet those little voices in me that whispered of the impossible—that would have me believe in the unbelievable?

I made my decision, picked up a green pin, hesitated a moment and then placed it over a position allied forces had been endeavoring vainly to take for a month. Port Naguro. Here the Japs were concentrated in numbers large enough to beat off all attacks. I made certain the pin was secure, then guiltily left the command post. Captain Hanely met me outside.

"Cramer!" he rasped. His eyes stared into mine. Was he going to question me on further peculiarities concerning the map? Had he noticed that the Jap pin had been removed from the trail *previous* to the actual Jap withdrawal?

"Yes sir?" I choked.

"We need an operations sergeant. Do you think you can fill the job?"

"I'll try, sir," I replied.

Twelve hours later news came over the radio of the capture of Port Naguro. Details were as yet obscure, but in a surprise attack the Japs had been smashed and the port taken.

As I write this now, the camp is asleep except for a handful of guards. I am alone in the command post, amidst

Sergeant Garry's maps. Two hours ago I stuck two green pins, allied pins, into Sergeant Garry's map of the world: One in Berlin and the other in Tokio. Now I am waiting with an eagerness that makes me tremble, waiting for the dawn and the news of events that will startle and brighten the world.

WHAT ARE OUR CHANCES FOR LONGER LIFE?

DURING most of history, progress toward a longer life has been slow, but the trend has not retrogressed. In the United States, between 1930 and 1940, four years were added to our length of life. Today the average American can expect to live almost 64 years, compared with the average of under 30 for India, 48 in Japan and 55 in Italy. America's expectancy of 64 years is topped only by New Zealand and Australia.

In ancient Rome the expectation of life at birth was probably under 25 years; pestilence, famine, war and the harsh servitude of the masses led to heavy mortality. By 1850, in America, the average had increased to a little more than 40 years.

Then came the modern sanitary era. Advances in medicine and public health curbed the terrible diseases of cholera, diphtheria, tuberculosis and typhoid, and set up systems of protection over water and milk supplies. As a result, the expectation of life in the United States by 1900 had advanced to about 50 years. The 14 years added since that date are the result of an intensive application of our knowledge of disease prevention, and a general and profound improvement in the standard of living.

At least one year would be added to the average length of life if we could solve the cancer problem, another year if we could achieve control of heart and circulatory impairments in middle life.

There are wide possibilities in a new field—the growing knowledge of nutrition. Research indicates that what we eat may have an important influence on our length of life. As the result of experimenting with the diets of pregnant women, it is entirely possible that proper prenatal feeding will save the lives of many thousands of infants and launch them into a healthier childhood. Child feeding is now practically an exact science. This knowledge, along with control of infections, is largely responsible for the fact that infant mortality is only a small fraction of what it was two or three decades ago; while for children under 15 years of age the death rate is 60 percent less than in 1920.

A tremendous contribution which the science of nutrition has made to a longer life is found in the statement by Professor Henry Sherman of Columbia: "A generous surplus of calcium results in better development of the young and a longer lease of what we may call the prime of life—the period between maturity and old age." This is but one example of what the new science of nutrition is doing to increase our vitality and thereby our average length of life.

Science may still have another approach to the problem of life extension. It has to do with the malfunction of the endocrine gland. Recent investigations show that such malfunctions appear to increase as we grow older. However we are hoping that our knowledge of the endocrine functions might give us a measure of control over the aging process, since glandular deficiencies may often be treated by administering the appropriate hormone.

The value of hormone therapy has been demonstrated in the modern treatment of diabetes, a disease which usually results from a deficiency of insulin, a hormone of the pancreas. There are about 600,000 diabetics who, thanks largely to insulin, not only live longer but live more abundantly than pre-insulin diabetics. A generation ago most diabetic children died within a year of the onset of the disease. Today, according to records, the diabetic child of ten may expect to live another 40 years.

In suming up, modern science offers the promise of, first, greater vitality and longer life through correct nutrition. Secondly, by correcting disturbances in the chemistry of our bodies, our whole concept of the prime of life may be changed and we may be able to carry the activities of our prime years well into old age.

By every means, continued investigation of medical problems which are still unsolved, such as cancer and the processes that lead to degeneration of the heart and blood vessels, must be encouraged. An individuals interested in life prolongation, we should submit to regular medical checkup. And our medical examinations should include a critical review of our diets.

We all want to enjoy as long a period of activity as possible—and for this, science is now providing the means more generously than ever. If we use them, an average length of life of 70 years, even of 75, is not a mirage; it can be a fact in a generation.—*C. S. Rice.*

The ancient one listened quietly while the German boasted with clenched fist

A Most

THERE exists no problem that logic cannot solve! was the German's boast—until he entered this Cretan cave

SCHLAGEL stumbled up the beach, spitting out curses and cold salt water with every step. He stumbled again, lost his balance, and fell face down in the rough sand, gasping for breath. Schlagel knew that he must stay there in the sand until his strength grew enough so that he could divest himself of his rubber life jacket and make his way back to headquarters with the information about the British convoy.

"Fool, fool, fool!" Schlagel's inner mind seemed to be reviling him for the overconfidence he had shown in his battle with the Spitfire.

Ingenious Paradox

By GEORGE TASHMAN

"If you had only turned and run, instead of showing fight with that *verdammt* British swine! If you had only stopped to think that the information was of much more use to the Fuehrer than one more dead Britisher! But no, you fool, you had to go after the glory, after the medals! Ah well, there is still plenty of time."

Schlagel turned over, groaning from exhaustion, and struggled to a sitting position. He started to undo the fasteners on his life jacket, but the work was slow, tedious. His fingers seemed to have turned to thumbs. Finally, having mastered the garment, he

shrugged his shoulders out of the jacket, and rose.

With nervous, jerky motions, Schlagel shook the sand out of his hair, rubbed his face briskly and looked about him. He had no idea of where he was except for the fact that he was probably on one of the smaller islands in the Agean Sea.

His mind seemed to be talking to him again. "Well, fool, don't just stand there! Did the Fuehrer stand thus at Munich in 1923? Action! That is the watchword. Find one of these Greek slaves and make him take you to an outpost—to a radio station. That information must get through! If the convoy reaches Alexandria, the British will have the supplies to start their counter-attack against Rommel. Move, Schlagel, move!"

Schlagel started up the beach. After all, if this was an island, it must have boats. And if it had boats, it must have harbors. And if it had harbors, it must have towns. And if it had towns, it must have people. And wherever there were these Greek slaves, there were also masters. And who were the masters but the German Army?

Oh yes, thought Schlagel, it was all very logical.

Logic was one of the things which *Leutnant* Schlagel had learned well at the University. Logic was what ran the earth, the universe. Logic was what the German Armies used—logic and a little intuition, of course.

And it was logic that told *Leutnant* Schlagel he must not stand around musing, but that he must move, move, move. Schlagel started walking up the beach at long, easy lope. Logic, that was it, thought Schlagel. How else could he move so easily, so rapidly, were it not for his fine body, his excellent physique? And was it not logical thinking on the part of the Fuehrer which had given him these manly attributes? How could one hope to be a member of the *Uebermenschen,* the super race, if one did not have a fine body? Those days in the gymnasium were long days, and hard days, but now they were beginning to pay dividends.

Suddenly Schlagel drew up quickly. He sniffed the air, much as a pointer sniffs when he scents the prey. A smile broke over the *Leutnant's* face. Smoke! Where there was smoke, there must be fire. And where there was fire, there must be man. A perfectly logical deduction.

SLOWLY now, Schlagel moved up the beach. He must sneak up on these fools, surprise them. After all, it is the element of surprise which wins many battles.

"Now," said Schlagel's inner mind, "just around that next sand dune, and I will be well on my way."

Schlagel dropped to a crouch, and slowly, oh, so slowly and so silently, crept around the dune. Chagrin and dismay covered his Nordic countenance. No one was there! But the odor of the smoke still filled his nostrils! There must be someone here! Schlagel's eyes rapidly covered the beach ahead of him. Rapidly, but logically, looking as far as they could, peering into every depression in the sand. Then his eyes turned to the cliffs to the right. More slowly now, eyes narrowed almost to slits, squinting, he covered every square inch of those cliffs until—ah! there it was. A small crack in those granite walls!

Again Schlagel crouched, crept the three or four hundred yards to the crevasse, and peered in. For a few seconds which seemed as so many eternities, he could see nothing. Then, as his eyes became accustomed to the gloom, his vision cut through the dark-

ness and the picture cleared.

At first he could see only smoke, haze and then, as a great gust of wind blew up the beach and into the opening, the smoke parted. Off in the distance, which seemed miles long, Schlagel could see two metal braziers, mounted on tripods, giving off heat and smoke. Mounted on the wall, perhaps six feet off the ground, two torches flickered. Under the torches, and between the braziers, sat what Schlagel had been seeking. A man!

Schlagel looked again, and decided that the distance from the mouth of the cave to the back wall could be no more than one hundred yards. Logically, Schlagel thought that he could cover the hundred yards in slightly under twelve seconds. And even more logically, Schlagel knew that the element of surprise was his, even if he ran into the cave, shouting. One hundred yards is such a short distance.

Drawing himself erect the *Leutnant* thought the situation over and decided that he could best achieve his goal by a dignified entrance, as was befitting a master encountering a slave.

Leutnant Ernst Schlagel squared his shoulders, drew a deep breath, looked straight ahead, and walked into the case. He advanced slowly, looking to the right and to the left, shivering slightly at the cold, damp walls which were covered with green slime. Before he realized it, he stood almost directly before the man.

LOOKING down, Schlagel involuntarily drew back a step. Why, this man was old! So old, that it was almost impossible even to estimate his age. The old man had a long white beard, and long white hair which hung down almost to his waist. He sat in an old, old chair, models of which the *Leutnant* had seen in the museums in Athens. In his lap he held an old, old book—a book which, from the looks of it, must have been one hundred—five hundred—who could tell how old it was?

"You!" ordered Schlagel. "Take me to the nearest German Army Post!"

The old man did not seem to hear him.

"You! Greek swine! Answer me! Take your damned nose out of that book and take me to the nearest German Army post!" Angrily the Nazi's hand went out, rested momentarily on the old man's shoulder, and then shook him.

The old man looked up quietly, and just as quietly he closed his book. He looked his visitor over from head to toe, and then he spoke.

"Who are you, my son, and what do you want?"

Red with rage Schlagel bellowed: "I am one of your conquerors. I am *Leutnant* Ernst Schlagel, of the Luftwaffe. I want to be led to the nearest German Army post!"

"Conqueror?" mused the old man. "Luftwaffe?" Bewilderment covered his wrinkled features. " I know of no conquest or Luftwaffe. I am just an old man who has been seated here for a long, long time meditating on the wonders of life. I just sit here and work with logic, seeking to uncover the mysteries."

"Logic?" screamed Schlagel. "Very well, then, I will give it to you in a logical sequence. We have overrun Europe. We have devastated the civilized world. We have slain thousands of your countrymen. We have enslaved millions of your decadent Greeks. We have the power, and we are, therefore, logically your masters. Following that thought through, I am your master."

The old man pondered for a moment.

"True, my son. If you speak the truth, I am indeed your slave. But I cannot take you to any place outside this cave, because it has been so long since I myself have left its confines. However, if you will help me in the solution to the problem in logic over which I am now struggling, perhaps I may be able to help you."

IT WAS now Schlagel's turn to ponder. "The old man is obviously mad. One must humor the mad in order to achieve anything with them. I will humor him, and then he will help me."

To the old man: "Very well, old one. What is your problem? I have been well trained in logic, and will, no doubt, be able to give you your solution rapidly."

The old man spoke: "My son, we all know what motion is. We see motion all around us, we move ourselves. Yet mathematically, what is motion? If Achilles seeks to overtake a tortoise, it seems to us that he does so with ease? Yet does he? Before Achilles can overtake the tortoise, he must first cover half the distance to the tortoise, then he must cover half of that remaining half, then half of that half, then half of that half, ad infinitum. Now then, my problem in logic is this: How can Achilles cover the distance between himself and the tortoise?"

Schlagel laughed, shrilly. "Ancient one, the answer is simple. You have been in your cave too long. Unless my memory fails me, a man named Zeno propounded that paradox. Yes, in the narrow conceptions of Zeno's day, the paradox had no solution, but science has gone a long ways since Zeno.

"The theory of time-space continuum, which has opened the confines of the infinite and the continuous has solved that problem."

The old man shook his head. "No, my son. I have thought of the continuum. I have spent many years trying to reconcile myself to that theory. But, just as with my problem, it is only theory."

Schlagel shrugged his shoulders. "That is neither here nor there. I have solved your problem to my satisfaction, and now you must lead me to the nearest village. I have information which is vital to the well-being of my Fatherland. Up, old one, and lead me."

The old man again shook his head. "I cannot lead you, my son. But you need no leadership. As I remember it, the nearest town is but a short walk up the beach. You might be able to reach it in a short time."

"You are mad," Schlagel screamed, spitting in his face. "I will not argue with you now, but I will return to treat you as you should be treated, and you may bank on that!"

"You will return," said the old man, "If you can first leave."

SCHLAGEL spat again, and, as he turned he noticed the eager look on the old man's face. Was it eagerness—or was it madness? Oh well, what matter, thought Schlagel. He finished his turn, and started walking briskly toward the entrance of the cave. Suddenly he stopped. Why, he had been walking for what must have been all of two minutes, and he was nowhere near the entrance of the cave. He turned and looked back at the old man who was watching him, watching him, with a faint, sad smile on his face.

"Smile, you swine," screamed Schlagel, "I'll give you something to smile about!" He started toward the old man, walked for what seemed a long time, and stopped. He was nowhere near the old man!

Schlagel turned, and ran for the entrance. He never reached it. Bewildered, he turned and again ran for the old man, who sat there, still smiling. He never reached the old man. Again he turned—the entrance—and again—the old man. The sweat stood out on Schlagel's forehead as he ran back and forth, never reaching his goal.

Finally he sank to the ground, sobbing with exhaustion. It was then he noticed the bones—human bones and animal bones, scattered near the dripping walls of the cave. Struggling to hold back the madness he felt creeping over him, Schlagel turned toward the old man and shrieked: "Old one, who are you?"

The smile vanished from the old man's face, and sadly he spoke one word. "Zeno."

Somehow Schlagel knew that he would never reach the entrance.

THE END

TOMORROW'S WORLD

ALONG with the death and destruction that every war brings, there is progress. Science and industry harnessed for conflict far outdistance the negligible cultural and social achievements of war-town years. Mechanically we will be decades ahead of where we were but a few short years ago. What tomorrow's world will be like depends on how far off tomorrow lies, that is, on the duration of the war. Every month that the war continues pushes scientific research to new heights of chemical creativeness. Industry has expanded far beyond the dreams of pre-war speculators.

In almost every aspect of our physical lives, these new changes will be felt. Luxuries of the pre-war world will be easily within reach of everyone, and products which were necessities—electrical appliances, furniture, automobiles, etc.—will be better adapted to their purposes, more convenient, more economical and serviceable.

Tomorrow's automobile, for example, will be so cheap that the number of cars on the road will jump to 50,000,000—twice the amount in use during pre-war days. Due to the discovery and development of heretofore unknown or undeveloped substances, the postwar car will be more spacious, and more comfortable. Its engine will be much more powerful. Through a redesigning of the engine in new materials, weight will be conserved. Every new automobile engine will be equipped with a supercharger, and it will be built to use fuel of 100-octane and higher. The modern airplane engine demonstrates some of the possibilities. It weighs less than one-fifth as much per horsepower as the 1942 model automobile engine, and it develops twice as much power per cubic inch of displacement.

We can easily see what tremendous gains have already been made by comparing the speedy development of only one commodity—gasoline. In 1939 the best aviation fuel was 87-octane. Before Pearl Harbor that same motor was serviced with 100 octane gasoline. An American designer recently built an aircraft engine of 100 horsepower, weighing only 100 pounds. These gains will be utilized in the manufacture of automobiles. The private car on the highway will have to compete with the private plane in the sky, and the postwar citizen will benefit from this competition whether he rides on the highway or in the sky, or both.

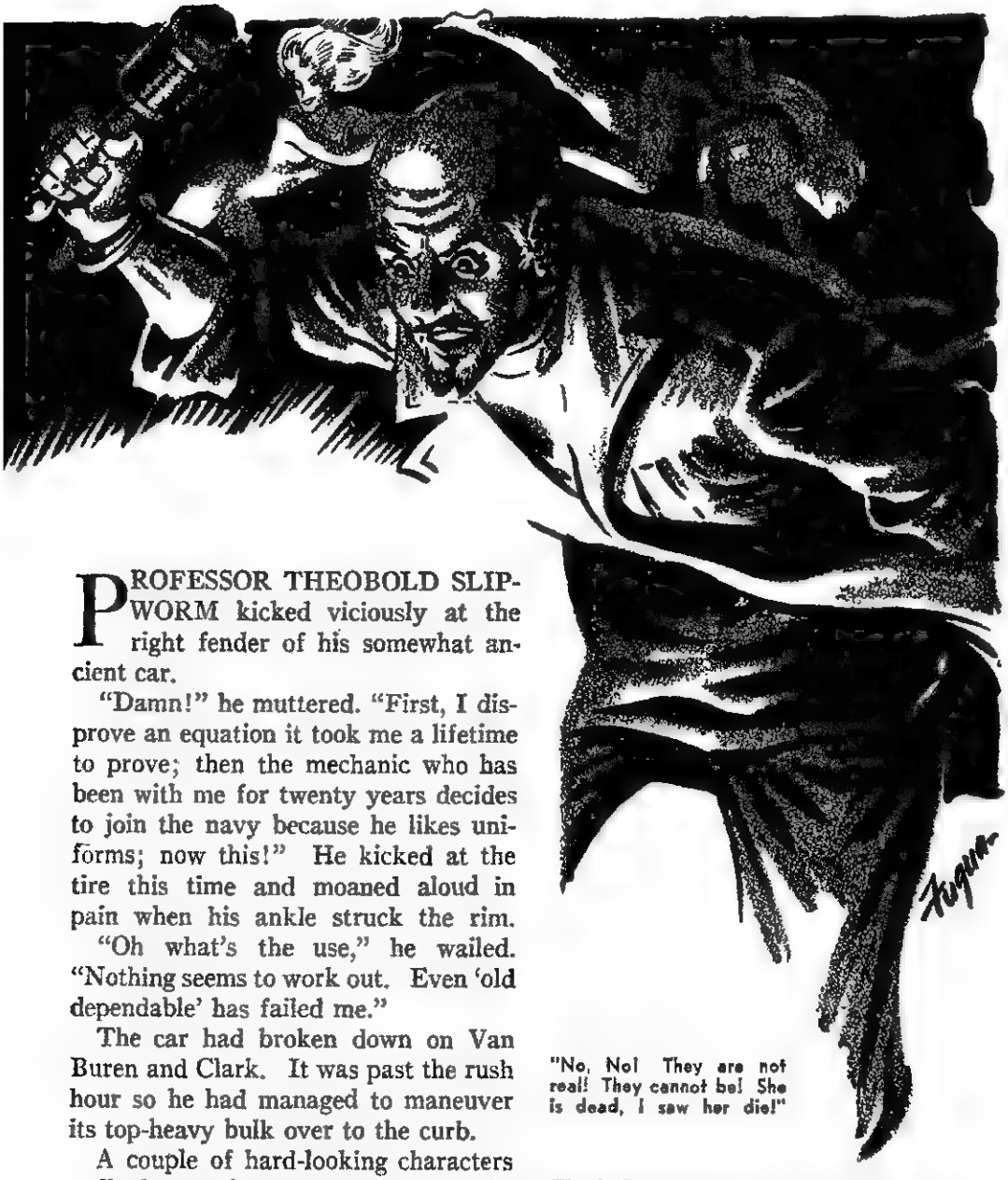
The principal wartime developments, other than new fuels which influence the design, production and cost of tomorrow's automobile are synthetic rubbers, new plastics, light metals, new alloys and new methods of welding, molding and combining metals, plastics, plywood and other materials. Whenever industry resumes production of automobiles it can start at scratch. Designers will not be bound by the traditions and limitations of old machine tools. The methods born of the speed-up of war production, plus the new materials and new uses of materials developed under the pressure of its needs and shortages, will be available to the automobile engineer to use as he wills. Lessons learned in the design, production, and use of the army jeep, with its powerful traction, no less than those acquired in the design, production and use of the tank, airplane and submarine chaser, will be available to automotive engineers and manufacturers—and to all engineers and manufacturers.

The new materials are for the most part chemical contributions. Even the plywood—such as is used to make the highly efficient Mosquito bombing planes, gliders, and other aircraft—owes a debt to the chemist. For it would not be possible to produce these workable, adaptable, and durable sections of wood to current standards of quality without the plastics and other synthetic materials used as binders. The new metals are right out of the chemist's crucibles. The rate at which they are pouring forth carries its implications of what tomorrow will be—not only the automobile of tomorrow, but tomorrow's railway, tomorrow's aircraft, tomorrow's oceanliner, even tomorrow's house equipment and garden tools.—*Henry S. Borden.*

The LIFE MACHINE

By LESTER BARCLAY

THE professor invented a machine that could reproduce things; but each time with some part missing. What was it the machine itself lacked?



"No, No! They are not real! They cannot be! She is dead, I saw her die!"

PROFESSOR THEOBOLD SLIPWORM kicked viciously at the right fender of his somewhat ancient car.

"Damn!" he muttered. "First, I disprove an equation it took me a lifetime to prove; then the mechanic who has been with me for twenty years decides to join the navy because he likes uniforms; now this!" He kicked at the tire this time and moaned aloud in pain when his ankle struck the rim.

"Oh what's the use," he wailed. "Nothing seems to work out. Even 'old dependable' has failed me."

The car had broken down on Van Buren and Clark. It was past the rush hour so he had managed to maneuver its top-heavy bulk over to the curb.

A couple of hard-looking characters walked, or rather staggered, out of the Chicago Coffee Shop. They clung precariously to each other for a second, then parted, one in the direction of Clark Street and the other in the direction of the car.

Professor Slipworm received a thump between his shoulder blades which sent

him staggering against the car. Recovering, he turned to see a huge hulk of a man leering at him. At least he thought it was a leer. But "Gimme" Gannet wasn't leering. The look on his face was that which was usually there. It was a look between a laugh and a tear as though someone had substituted water for his favorite beverage, gin.

"'Smatter, mister?" Gimme asked. "Car stuck?"

Professor Slipworm found his breath and voice again.

"You—you—d r u n k e n sot!" he shouted, brandishing a fist the size of a child's. "I'll have you arrested! I shall see to it that you are thrown—"

"Aw, pipe down, Shorty." Gimme grinned and stepped closer to the curb. A look of awe appeared in his narrow set, bloodshot eyes. His heavy, dark eyebrows, slanting down almost to meet the great blob of flesh he called a nose, gave him an appearance of ferocity which was entirely misleading. Gimme was in reality a gentle person. But his great bulk, coupled with a face always with its look of anger, frightened people.

Professor Slipworm reacted as did everyone else who saw Gimme for the first time. When the big man stepped forward, the professor slid hastily behind a light pole. But Gimme wasn't interested in Slipworm.

"A Rowles!" he exclaimed softly. "An' it's real!" His fingers made caressive motions across the polished framework of the chassis. He shook his head in admiring wonder.

Slipworm, from behind the slim safety of the light pole, bent a close look of observation on the big man. His shrewd eyes, behind the horn-rimmed glasses he wore, saw that the grime and dirt on Gimme's clothes was not from the gutter, but of the machine shop. It was either machine oil or grease which made those stains on the shabby work clothes the man wore. He noticed, too, the look of absorption on Gimme's features. He was positively engrossed in the car. So much so, that he was lifting the hood from its fastenings. That was a little too much for Slipworm.

"Just a moment, my friend," he said sternly, as he stepped to the big man's side. "Just what, may I ask, are your intentions?"

Gimme lifted his head from the depths of the engine compartment, looked at Slipworm with blank, unseeing eyes, and said:

"Gimme a wrench—a small one."

Slipworm's mouth slipped from his hinges at the odd request.

"What for?" he asked inanely.

Gimme looked his disgust.

"Can't reach those wires with my fingers," he said succinctly.

Slipworm said, "Oh," and opening the front door, reached in the glove compartment and pulled out the tool. Gimme took the tool and began to tinker mysteriously with the engine. Slipworm couldn't see what he was doing because the man was so big he blocked off any view of what he was tinkering with.

Every now and then a grunt or muttered phrase came from the interior. It took only a few moments. Gimme's head re-appeared. He tossed the wrench to Slipworm and said nonchalantly:

"Okay, Shorty! Just step in and start 'er. She'll go. Man," he said admiringly, "these old buggies were built! Tricky wiring systems they got, though."

Slipworm did as he was bid. And no sooner did he press the old fashioned starter button than the motor burst into a full throated roar of power. He shut off the motor and joined Gimme, who was still standing there.

THERE was respect—even awe—in his voice, when he said:

"Thank you! And if I may, I would like to compliment you. What you have just done is as fine a piece of mechanical repair as I have ever seen."

"Nothin'," Gimme said loftily. "Nothin' to it. Transmission wires crossed—caused a short. Saw it right away."

"That, my dear man, is just the point!" the professor exclaimed. *"You saw it*—and instantly. And let me tell you how remarkable that is; I have had this car in some of the finest repair shops in Chicago." He shuddered in memory of the experience. "Do you know, sir, that it takes days to do even the most simple of repairs on it. And here you, in a few minutes, diagnose and repair something complex. I cannot tell you how grateful I am. Here," the Professor reached into his pocket, with the obvious intention of reaching for money. Gimme stopped him.

"'S all right, boss," he said airily, "fergit it! Was a pleasure to work on that job."

Gimme's breath, redolent with gin, floated down past Slipworm's nose. His eyes brightened and the pale lips spread in a smile.

"Then perhaps a drink—" He left the words hang in the air, like stockings over a fireplace during Christmas.

Gimme fairly leaped at the suggestion.

"Boss, that's different! Always glad to have a drink with a pal."

He took the Professor's arm and steered him into the coffee shop.

Harry, the bartender, didn't bother asking Gimme what he wanted. He knew that. Slipworm ordered a short beer.

Harry brought the drinks and one for himself and, taking the dollar Slipworm laid on the bar, invited them to, "Drink up. The next is on the house."

Gimme downed his double gin as though it were water. Harry did the same with his Beam. But the Professor, his hand holding the glass inches from his lips, stopped it there. He was looking toward the beer taps at the center of the bar.

"Did I hear aright?" he murmured to himself. "Or was it my imagination? But I'd swear the tap played a tune when he drew my beer."

"Beer Barrel Polka."

Slipworm looked questioningly at Gimme. He had uttered that cryptic phrase.

"That's the name of the song," Gimme explained, as he reached for the second gin which Harry placed before him.

Slipworm drank the beer and said:

"I *thought* I heard music! Is that something new?"

"Don't know whatcha mean. Guy said no sweeter music then what the beer tap makes. Showed him I could get real music out of it."

"You—you did that?" But how?"

"Easy! See that radio?" Gimme pointed to a small radio-phonograph combination. The top was folded back. "Got a record on that. Connected circuit to cooling system. Every time taps brought down circuit's broke. Record plays. Simple."

SLIPWORM shook his head in puzzled wonderment. "Simple," this man called it. He looked at Gimme again, measuring him. He could see and hear that insofar as formal education went this man had little. But he had something far more precious. A positive mechanical genius! And the solution to a problem came with that thought.

"Mister, er—"

"Just call me Gimme."

—"Very well, Gimme. Are you employed now?"

Gimme favored the professor with a look of annoyance.

"Listen, Shorty," he said meaningfully, "I don't believe in workin' for anybody. So don't go offerin' me a job."

Slipworm was crestfallen. That was his thought, offering Gimme a job. He was just the man he had in mind. And inspiration struck him.

"I wouldn't think of offering a scientist of your caliber a job," he said, as though Gimme had insulted him. "But I was going to ask if you would collaborate with me on an experiment."

The look of annoyance changed to interest.

"Experiment? What the hell d'you make that needs my help?" Gimme wanted to know.

"Just come with me," Slipworm said. And without waiting to see if the other followed, he started for the door.

Gimme was right behind.

They drove out of the Loop and when they arrived at Grand, Slipworm turned west. He took Elston where those streets intersected and drove into the very heart of a shabby, factory district. Finally, he stopped before a one-storied building.

"This is it," he said pushing at Gimme.

Gimme got out and followed the professor into the building. They passed through a room which had once been an office. Several dust-encrusted desks still remained as evidence of its former use. Then they went through several rooms which were storerooms. Gimme noticed crates, stencil-stamped "Machinery." In the last room were a dozen drums marked "Alcohol." Gimme made a mental note of that. Slipworm opened the other door to that room and pressed a wall switch.

A surprised grunt came from Gimme when he saw what the light revealed.

In the exact center of the room and reaching from the floor almost to the ceiling was a machine the like of which he had never seen. It looked like a huge rheostat, attached to a control board fully ten feet wide. Set in the board at intervals were various dials and knobs. In the exact center of the board was a large dial showing one hundred and eighty degrees of calibration. To one side of the room, adjacent to the machine, was a large control box, itself almost large as the mechanism. Gimme was admiring.

"Would you like to make a closer inspection?" Slipworm suggested.

GIMME followed the Professor as he paraded around the machine. As they walked the Professor explained several mysterious parts which Gimme saw for the first time.

"See those," the professor pointed to two large tubes, set at either end of the well-like opening in the machine. They looked like the antennae of some great insect. "Four smaller tubes contain my Z-ray. Upon them rest the success of my experiment. Here," he pointed to what looked like a huge storage tank, "is where the material will be stored. And here," he pointed to the cabinet beside the machine, "is my control board. This will direct the power to the dials.

"Well, Gimme, what do you think of it?" he asked, when they came back to their starting point.

Gimme had never seen so complex a machine in all his life. His fingers fairly itched to tinker with and delve into it. It intrigued him.

"Who made it?" he asked. "And what's it goin' to be used for?"

Before the other answered, he led him to a flat-topped desk in a corner

of the room and after Slipworm made himself comfortable in the swivel chair, he invited Gimme to sit on the desk.

"I'll answer the last question first," he said, "because it's the most important." He pursed his lips, settled his glasses firmly and made a cupola of his fingers. They were gestures he had used in the classroom for many years. They always preceded one of his lectures.

"To begin," he said in his best didactic manner, "we are engaged in a war. A war in which the services of science and industry are being used to the fullest degree. I can say, with pardonable pride, that I am a scientist. To some, the lowly mathematician such as myself is not a scientist. To those who hold such views, I can point to such men—ah, forgive me; I digress."

It was evident that Professor Theobold Slipworm felt strongly about that condition. He continued his lecture:

"As I said in the beginning, we are engaged in a war. We, of course, shall emerge victors. But how are wars won? To quote a famous Confederate soldier, 'Get there fustest with the mostest.' And that we must do.

"This my friend, is a war of production. That country which will produce the greatest number of weapons in the shortest possible time, will win. We have the materials and the means. But—" he paused and as he made his point, he sounded a fist in a palm to give emphasis, "we suffer from obsolescence in our production methods! They are all antiquated! Luckily, our enemies are no better off.

"It is the purpose of this machine to solve the greatest difficulty in production—the inability to produce, in limitless quantities, the weapons of war."

GIMME shook his head dazedly when Slipworm finished. He had never been bombarded with so much talk before. He understood very little of what the professor said. But his simple mind grasped one fact. That the professor had thought up this machine. And he, Gimme, was to help him. But why?

"Look!" Gimme said simply. "I ain't smart. I'm just good with my hands. You didn't bring me here to show me how smart you are. What's wrong?"

"The machine!" the Professor said sadly. "It doesn't work. And I can't understand it. I checked every factor in my equations. They are all correct. There is no earthly reason why it will not do the things it's meant to do. Yet," he shrugged narrow shoulders helplessly, "it does not do that which it is intended to."

Gimme looked over at the huge mass of metal, gleaming in the shallow light of electric bulbs.

"Start it," he commanded. "Get it goin'."

Professor Slipworm walked over to the control board attached to the machine and pressed down on a butterfly switch near one of the dials. A humming sound filled the room. Then he moved to the other control board and flicked another switch. The hum rose to a high pitched whine, so high in tone it was almost unbearable. As for the machine, it lit up like a Christmas tree. The large tubes glowed in a pale, milky light. Power tubes flashed brilliantly. Little glass balls lit up as though the jackpot had been hit. And over all, the loud whine of power on the loose.

"Now, what's it s'posed to do?" Gimme asked. Slipworm smilled.

"Sorry, Gimme," he apologized. "But that is something I can't tell you. That is, not yet. This I can say. Just as we have reproductive organs, so has this machine. With this difference— The

machine must first destroy before it can re-create. Here, I'll show you." He climbed to the top of the machine and pointed into an opening. Gimme joined him and peered down into it.

Bright fingers of purplish light were streaming from a dozen openings in the tunnel-like wall. They crossed and where one ray bisected another, sparks were thrown off.

Slipworm explained:

"Those rays act like cutters. Whatever falls into the mesh of light, disintegrates into the molecular structure of its basic elements. These elements send up waves which are caught in the Z-rays. The Z-rays integrate the molecules by means of a process known only to me. They reform into that which was there originally. That process goes infinitely on, because the basic elements remain in the mesh light and send up these waves. Do you follow me?"

"Nope. It's all Greek to me."

"H'm. I think I'll give you a practical demonstration," said Slipworm.

He suited the action to the word. He took an automatic pencil from his pocket and tossed it into the hopper. Gimme watched it fall into the web of purple light. Streamers of sparks flew up when the pencil struck. It glowed weirdly for a second, then disappeared.

THE professor stepped down and returned to the control board. He began to turn the large dial in the center. As the pointer passed the ninetieth calibration, Gimme noticed the color in the large tubes become opaque. The closer the pointer came to the final notch, the more milk-like and viscous became the color. As the pointer reached the last notch there was a clicking sound and the pencil appeared midway between the large tubes, held there as though it was attached to an invisible wire.

A wire grid resembling a screened windshield had glowed red when the Professor began to turn the dial. He had cautioned Gimme to stay behind the grid. Simultaneous with the clicking sound, the grid lost its color. Then the Professor said:

"Bring the pencil here and I'll show you what I mean."

Gimme gingerly reached for the pencil. His fingers trembled. This was machine magic such as he'd never seen. What his eyes saw was inexplicable. A pencil had disappeared in one moment and in another it had re-appeared, out of thin air. Whatever held the pencil released it instantly.

The professor examined it closely.

"There," he said. "Can you tell me what is missing?"

Gimme looked at it carefully.

"It had a clip," he said. "Ain't there now."

"Right! And now, do you understand?"

"Sure, I get it. The stuff comes out but it's always somethin' short."

"Exactly. And that is to be your work. The solving of the puzzle. What happens to the missing parts? I will teach you the factors you will have to grasp to understand the machine. That will take several days. From then on you will be on your own."

Gimme's reply to that was short and to the point.

"When do we start?"

Slipworm smiled.

"Tomorrow morning will do," he said. "There's a cot here and a small gas range, if it is necessary to work nights. There will be no salary but if the experiment is a success, your name will . . ."

Gimme was no longer listening, however. His mind already was at work on the machine. And his fingers were fairly itching to get to work.

So the machine wouldn't work. "It'll work 'fore I'm through with it," he thought. "Must be in those coils. I hope. It'd be a hell of a job tracing those wires. Must be hundreds of 'em."

He was brought back to present by the professor's voice. There was a distinct note of pride in it.

"Some day the name of Slipworm will be coupled with Descartes, Erasmus and Einstein. Callow college cubs will curse it. But the world will be a better place to live in. And all because of this machine, my Life Machine."

"Sure, sure," Gimme agreed. "But it doesn't work. S'pose I tinker with it tonight? Maybe I c'n find what's wrong."

"Very well, Gimme," said Slipworm. "I have things to do which will take all day. See what you can do, and when I return tomorrow night, we will work on it together."

The professor left and Gimme started to "tinker" with the machine. But after an hour he gave up. For once he was stumped. He was one of those rare people, a mechanical genius, but this thing was too much, too complex for him. There were forces held in leash in the machine. Forces about which he knew nothing. The solid realities of wires, coils and metal were child's play to him But the mysterious Z-ray; the fingers of purple light, the impalpable yet very real emanations which these lights produced, baffled him.

GIMME had never held a job longer than a week. Not because he was lazy, but because in a week he knew everything there was to be known about the job. This was another matter. He realized, after several hours, that he was completely in the dark in regards to the machine's inability to reproduce in exactness. It was a situation that never occurred to him before.

He sat down at the professor's desk and tried to think out what was wrong. He didn't sit long. A peculiar instinct had always told him what was mechanically wrong with anything. But tonight, that instinct had failed him. He had never trained himself to think. And so after ten minutes, his mind began to wander. It wandered to those drums of alcohol in the storeroom. He grinned slyly. If only one of those drums was full. Gimme was almost disappointed. But one of the drums did hold a little alcohol; enough, he figured to make two pints of fairly palatable gin. He had once worked for a week as a mechanic in a distillery. He knew what to do, if he had the necessary equipment. And he had.

PROFESSOR THEOBOLD SLIPWORM, his small figure neatly clothed in a light gray suit, his step jaunty and alive, opened the door to his laboratory. He had spent an agreeable afternoon visiting old friends at the university. The high-pitched, familiar whine greeted his arrival. He noted, with satisfaction, that the Life Machine was in operation. But he didn't see Gimme.

"Probably worked all night and morning. Must be catching a few hours sleep," was his thought, as he took off his jacket and slipped on the dusty, tan coveralls in which he worked.

He started toward the machine and glass crackled and splintered under his feet.

"What's this?" he said aloud as he bent to examine it.

It proved to be the remains of one of several dozen pint jars he had. Then he noticed the rest. They were strewn in broken remnants all over the

floor. His nostrils lifted, as he sniffed at an odor not associated with his experiment. Alcohol!

His first thought was, "Gimme!" He closed the starting switch on the machine and his ears were immediately assailed by a sound foreign to the room. Snores! Nerve-shattering explosions of sound. Slipworm had never heard such snoring. They came from the little room in which he had the small gas range, a supply of food and a cot.

Gimme was in there, stretched flat on his back on the cot. His chest heaved: his lips puffed in and out as he snored; and spittle dribbled untidily down his unshaven cheek.

Slipworm was disgusted.

"I should have known better," he said to himself, as he shook the sleeping drunk. For Gimme was drunk. His breath reeked so of alcohol, Slipworm kept his face averted. He managed finally to bring Gimme out of his torpor. The big man stood up, scratched thoroughly at his mop of uncombed hair, yawned widely, and after peering through bloodshot eyes at the professor, mumbled:

"Don' work. Machine's broke. Don' work."

"So it is broke, is it?" Slipworm yelled. The spectacle of the drunken Gimme and the thought that perhaps Gimme had meddled with the machine and broken an irreplaceable part, maddened Slipworm. It was useless striking Gimme with his fists. But there were several heavy pieces of crating wood lying close by.

Slipworm picked up one of the staves and began to beat Gimme about the head and shoulders, shouting, as he struck:

"Sot"—thump, whack—"twenty-five years"—sock, whack—"I spent on the machine and in one day"—thump, whack—"you wreck it!"

Gimme, his arms held over his head in an effort to protect himself, groaned, between blows:

"Wait, boss"—thump, whack—"nothin' happened"—sock, whack—"to it. Ow! Don't"—sock—"I'm tellin' ya—"

Slipworm stopped raining blows on Gimme. Not because of what the man on the bed said, but because his last blow splintered the club.

He shook the end that remained in Gimme's face and shrieked:

"What did you do to it? Imbecile! Moron!" Suddenly his temper left him. Sadly he whispered, "How could you do it?"

Gimme stopped his wailing long enough to say:

"Gee, boss, nothin' happened to the machine. Ow, my head! I fooled with it f'r a while an' then—"

"Yes," Slipworm prompted.

"—I remembered the alcohol. So I thought I'd have a drink. Made a couple a' pints. Then I saw the jars. Got an idea—oh, my head!—that maybe the machine would give me more. So I threw jar and gin inta the hole there."

"Well, what happened? Did the jar come back?"

"Oh yeah! But the gin didn't. So I tried it again. Just the jar came back. Guess I was so drunk, I got mad and—" He left the rest unsaid.

"I know," Slipworm said wearily, but there was also relief in his voice. "So you broke every jar you found."

"Uh huh."

SLIPWORM broke into sudden laughter. Gimme looked at him as though he thought he'd gone mad. The professor sat down beside Gimme. His rather young face, usually smooth and unwrinkled, held lines of laughter in it now.

"That was silly of me, wasn't it? Of course I assumed that something

had happened. The more I struck, the deeper my anger became. Really, Gimme, you must forgive me."

Gimme grunted a sour, "Sure," and continued to nurse his bruises.

"Well," said Slipworm rising and starting to the laboratory, "shall we get back to work?"

Gimme looked up. His face looked more sullen than ever.

"Nah!" he grunted. "Ain't no use. I can't do anything with it."

Slipworm nibbled at his lip in vexation. He shouldn't have lost his temper. He needed the derelict, if only to make minor repairs.

"Wait, Gimme," he said contritely, "I am really sorry all this happened. And insofar as the machine is concerned, I didn't expect you to make things right. After all—"

"Aah, fergit it!" Gimme snarled. He saw the Professor was no longer angry. "I'm scrammin' outa here. That machine gives me the willies anyway."

He started for the door. Slipworm stopped him before he quite reached it.

"So you're scrammin' outa here," the professor mocked him. "Then remember this before you go! You aren't just letting me down. You are letting your country down. Because if *we*," Slipworm put accent on the word, "iron out these difficulties, then the war will be measurably shortened to our advantage. But I see you have made up your mind. Very well, go. But if you *should* change your mind, here is my card. Call me."

He thrust a card into Gimme's hand. The bum put it into his jacket. He didn't read it. Nor did he pause on his way out.

REINHOLD SHMUTZ bent his head close to the blondined one of Clarice Le Clair. The scar which ran from his forehead to his chin gleamed dully white in the soft light of the booth they occupied at the Glitter Bar on State and Van Buren.

"Well, Fraulein," he whispered, "what have you heard?"

Her eyes, beneath the curtains of their artificial lashes, held fear. She was a tall, rather thin woman in her middle twenties. She danced in the chorus at the White Way burlesque theater. Her face, despite its layers of stage make-up, looked haggard.

Shmutz smiled. A quiver of fear ran down her spine at the facial contortion. So she was to play mouse to his cat again. Her eyes pleaded with him. But if he saw the plea he gave no sign. His one good eye looked unblinkingly into hers. The other was glass and fit badly; the pupil being off center and pointing to the outer corner of the lid. It lent a grotesque and horrible air to his face.

"Well?" His voice was a knife-point, digging at her vitals.

"Please, Reinhold." She stumbled over the words. "I didn't—I didn't have a chance—last night. You see we got through so late and Flossie wanted me to—" The words came out in a swift rush, as if her fear compelled her to get it over with as quickly as possible.

His fist came down with a crash on the booth top, spilling her drink and making his empty glass dance.

"Stop!" he growled. "Enough of these excuses! Every night it is the same thing. Already they are losing patience with me. With me—Reinhold Shmutz! As though I am somebody—"

"Reinhold," she begged, "please. Somebody will hear you."

Her eyes, their pupils contracted in fear, glanced around the crowded bar, as though she expected a demon to leap from the crowd.

"Shut up," he said, speaking slowly

and softly. "You are becoming a burden. A useless burden! And that is not good. You understand?"

She nodded dumbly.

"Go!" he commanded. "Go back to your posturings for the morons. Tomorrow, I will call."

He dismissed her, as abruptly as though she were a slave, whose will, as well as body, belonged to him. She left without a word.

He sat for several minutes, staring with unseeing eyes at his empty whiskey glass. Then tired of the noise about him, he too got up and left.

"Damn!" he muttered when he came outside. "I might as well get drunk. It is easy to forget then."

His steps, slightly wavering in the spell of the whiskey, took him past the Chicago Coffee Shop. Its brightly lit interior, in sharp contrast to the shaded looks of the taverns, made him pause and look in. Whatever he saw there must have pleased him for he decided to continue his drinking there.

THERE was but a single vacant stool at the bar. Shmutz sat on it. A street car employee sat on one side and on the other sat a large, unkempt individual, wearing grease-stained jacket and trousers. A tall glass of gin rested in front of the big man and with every sip he took he would mumble something to himself.

But Shmutz had his own troubles. He ordered a double whiskey from the bartender, and when it came downed it in a single gulp. Then he ordered another and treated it in like fashion. The third he nursed.

"So," he came back to the theme he had played at the Glitter Bar, "they are displeased with me." Suddenly he was drunk. He began to mumble aloud, "There'sh no jushtish. Alwaysh did m'best. No credit. Alwaysh did besht."

The big man turned to him and said, in a bleary voice, " 'Scuse me. Wash you talkin' to me?"

Shmutz regarded him owlishly for a second and shook his head.

"Shorry," the other said and went back to his drink.

Shmutz finished his drink and ordered another. As he waited for the bartender to bring it, the mumbling of the big man beside him came clearly to his ears.

"So. I'm traitor. Well he c'n take machine and stick it," the big man said. "Don' work anyhow. Gonna win war with it. Hah!"

As quickly as he had become drunk, so quickly did Shmutz sober up on hearing those words.

"You have troubles too, eh, friend?" he said softly.

The big man turned blinking, drunken eyes in his direction.

"Huh?" he said. "Yah, troublesh. Plenty. Ain't no good. Me!" he suddenly shouted. "Ex servish man. He can't shay that 'bout me."

Shmutz laid a restraining hand on the other's arm.

"Easy, my friend," he cautioned. "They'll only throw you out."

The other took his advice.

"That's better," said Shmutz. "Now what were you saying about being a—traitor?"

A foolish grin came to life on the big man's face.

"Buyin' a drink?" he suggested.

Shmutz laughed.

"A drink. Hell, I'll buy a bottle."

"Shay. Thash pretty good. You're aw right. You're my frien'." He pawed in amiable friendship at Shmutz's shoulders.

Shmutz bought a bottle from the bartender and said:

"Well, we've got a bottle. What'll we do with it?" Then as though

struck by thought, "Say, mister, how about going up to my place and killing it?"

"Good idea; lesh go."

REINHOLD SHMUTZ lived in a small hotel on the near North side. The two men got out of the cab they had taken from the tavern. It was an effort to maneuver the big man around but Shmutz managed to get him to his room. In the room at last, Shmutz dumped his new friend into an overstuffed chair. He sprawled out in it, puffy lips opened wide in an idiotic grin. He breathed noisily, gustily. His eyes were glassy. Shmutz looked down at the drunk and muttered an imprecation concerning "damn drunken fools."

He began to think he had made a mistake. That peculiar instinct which had always told him when a person would prove valuable to his needs seemed to have failed him. The moment he had heard this man blabbing about his machine which would win the war, something told him to make an acquaintance. Shmutz stared in wonder at the untidy hulk sprawled out in front of him and wondered to what use he could put him.

The glazed eyes turned upward to focus in his face. The lips mumbled a broken phrase, "shleep—gotta shleep—fix machine—" and then his eyes closed. He was asleep.

Shmutz went through the man's pockets. Nothing except a card which read, "Theobold Slipworm—eighteen hundred and six Elston Ave. Briargate 6123."

The card meant nothing. It told nothing. Shmutz shrugged his shoulders and walked into the bathroom. After rinsing his face in cold water, he felt better.

"Now to sober up my friend," he decided. "But not too much. He may not talk then."

He took a hand towel from the rack and soaked it thoroughly in cold water. Then he wrung it out and brought it into the other room. The man in the chair was snoring in stentorian bellows.

Shmutz pulled the other's hand down and slapped the towel against the man's neck. A gasp came from the big man's lips. The head came back with a jerk and Shmutz slapped him gently across the face with the cold wet towel.

"Uh, don't! S'cold!"

Shmutz dropped the towel to the floor and began to shake the other. After several minutes, Shmutz felt the man trying to pull his head from Shmutz's grasp. He let go and said loudly:

"Wake up, my friend, I have a drink for you."

A coated tongue licked at dry lips. Leaden colored eyelids moved away from bloodshot eyes, and Shmutz saw that consciousness had returned.

"I'll make some coffee," he said.

The big man gulped down the cup of steaming liquid as though it was water. He took the second more slowly.

"Feel a little better?" Shmutz asked.

"Yah. How'd I get here? And who are you?"

"Don't you remember? That tavern on Van Buren Street—"

The big man's eyes narrowed.

"Sure," he said nodding his head slowly, "That's right, the Coffee Shop. I was drunk, wasn't I?"

Shmutz almost laughed in the other's face. So he didn't remember.

"Yes, you were drunk. Luckily for you, I happened to be there."

"Why? What happened?"

"We-ll, you were getting kind of loud about something. And I thought that perhaps a little air would help you."

"Say!" the big man exclaimed, "I

remember. I was blowin' my yap about that machine, wasn't I? Sure." Resentment flamed in his breast again. "Well, I had a right to, damn it! Calling me a slacker. Why that little shrimp never had a better mechanic. Him an' his goofy ideas."

"Oh," said Shmutz softly, "so you are a mechanic?"

"Me? The best there is. But that machine had me stumped."

It was evident he was a man with a one track mind.

"Well never mind that. How about a drink?"

"Sure. Got one here?"

SHMUTZ opened the bottle of gin he had bought and poured two drinks.

"Ah! That's better," said the other, shaking his head in satisfaction.

They sat silent for a few seconds, then Shmutz said softly:

"Yes, my friend, some machines have us stumped. It must have been very complicatted."

"I'll say it was. Had more gadgets on it. An' just because I tried to get a little more gin than I had, the guy raises a big stink."

"So. Tell me about it."

He did. And in conclusion said:

"So he calls me a traitor. Says I'm lettin' my country down. Where does he get that stuff?"

"Then you quit?"

"Well—I c'n go back to work today if I want."

"You are lucky then. You have a job. And you are also to do your country a service."

"What's wrong? Haven't you got a job?"

Shmutz sighed heavily.

"No, my friend. I too, am a mechanic. Just now I am out of work. Perhaps soon I will find another job."

"Say, I got an idea. An' I'll bet he'll do it or my name ain't Gimme."

"What did you say your name was?"

"Gimme. They call me that because I'm always askin' for somethin'."

"Interesting. My name is Ronald Smith, Mister Gimme."

"The 'mister' ain't necessary, Smith," said Gimme. "But about this idea. That Slipworm guy'ud take me back. He says he needs me. So when I go down in the mornin', you're comin' with me."

"I?" said Shmutz. "Why?"

"Well, you need a job don't ya? An' if he wants me bad enough, he'll hire you too."

THEOBOLD SLIPWORM threw the pencil away in disgust. The desk top held a mass of papers, each of which held rows of figures, formulas and problems.

"Damn!" he swore softly. There were deep circles of fatigue under his eyes. A muscle twitched in his cheek. He had been working all night, figuring and trying to puzzle out what it was that was wrong. "Perhaps," he said wearily, "there are mechanical difficulties I hadn't thought of. Things which are beyond my understanding. If only that Gimme had stayed with me." He sighed and picked up another pencil. and there was a knock on the door.

"Come in," Slipworm called out.

The door opened and Gimme and Shmutz walked in.

Slipworm's sigh of relief could be heard across the room. He hastened to greet Gimme.

"I'm glad to see you," he cried. "You are coming back to work, aren't you?"

"Yeah. An' I brought someone along to help. This is Smith," Gimme replied and introduced his friend.

Slipworm shook hands and said:

"Good! Another hand won't hurt. Well, shall we get to work?"

Shmutz proved to be a capable and

efficient electrician, and very curious about the machine and its purpose. His curiosity, however, was masked by his manner, which seemed to say, "As an electrician, all this intrigues me."

Every now and then a peculiar gleam would light in his eyes.

"Gott!" he thought exultantly. "This man is genius. But a fool. To permit strangers to examine; even help them in their examination. But why should I complain? It will serve my purpose perfectly."

Slipworm turned on the Z-ray; this time for Shmutz's benefit. Then he did something new. He showed how quickly the machine reproduced. After dropping a screw into the opening, he went through the various phases of operation he had gone through with Gimme. But when the screw rested on its invisible platform, he threw another switch. A metal ball attached to a slender steel pole began to revolve.

Circular bands of light came into being at the pole's base and flowed upward. As they reached the level of the metal ball, they were dissipated into the air.

And as these spirals of light formed around the slender, steel pole, so were spirals formed around the large opening in the center of the machine. Each of these spirals bore thousands of screws.

The professor permitted only a half dozen of these spirals to form, then he cut the switch. When he returned with a handful of screws and showed them to Gimme and his friend, they saw what was wrong. The heads were missing on all the screws.

"You see," he said to Shmutz, "it reproduces, but imperfectly. That is our problem."

"Y'know, boss, I got an idea about that," Gimme said.

They looked at him expectantly.

"If y'don't mind, I'd like to figure it out by myself. I'm pretty sure I'm right, too."

"Go right ahead," said Slipworm. He looked at his watch. "Oh my, it's almost ten. Didn't realize it was so late. Can I drive you anywhere, Smith?"

The Professor could and did; to Division and State.

CLARICE LE CLAIR showed up at Shmutz's apartment around midnight. He had called her in the afternoon, during lunch.

She opened the door and stopped, mouth agape. He was pacing across the worn carpet of his room. There was such a look of exultance on his face as she had never seen.

"Sit down, my dear," he said softly.

She looked at him in surprise. His manner was so gentle it frightened her more than when he was brusque.

"Yes, Reinhold."

She sat in the same chair Gimme had sat in the night before. He continued his pacing for several more minutes. Abruptly he stopped and looking down at her frightened face, said:

"You do not want to do what I have been asking you?"

"Oh yes," she said eagerly. Too eagerly.

"Never mind." He dismissed her eagerness with a wave of his hand. "I know better. This business—shall we say—of prying into the affairs of war plants is not to your liking."

It was a statement, not a question. She said nothing.

"But whether you like it or not does not matter. You will do it! Or else the baby brother, the one who is now a prisoner of war, shall suffer—because his sister did not do the little things we ask."

Suddenly she began to cry. She buried her face in her hands. So great was her grief her body shook unrestrain-

edly in its grip.

The sight and sound of her weeping angered Shmutz. He grabbed a handful of her hair with one hand, pulled her head back and with the other slapped her heavily across the face several times.

"You cow," he growled, "stop that!"

She cowered back in the chair. She had become too frightened even for tears. But every now and then a sob would escape through her lips.

"Remember!" he said. "A German is a German wherever he may be. Your name is Schmidt. A good German name. And we in Germany still consider your brother one of us. So if it is necessary to punish him, it will be as a German, It is not even pleasant to think of."

That smile, evil as the pit of Hell, broke out on his lips again.

"But tonight, I will not talk of that. Instead, dear Fraulein. I have good news for you. Ah yes, good news."

He rubbed his hands in gleeful anticipation.

"I have but one more job for you. When that is done, you may do what you will. I shall ask nothing more of you."

Her eyes opened wide in amazement. Not any more of drinking with sailors and soldiers. No more asking where they were going. No more drinking with working stiffs from war plants and getting them drunk enough to spill information Shmutz could use. It couldn't be true! He was playing with her again.

SHE remembered that night at the Glitter Bar when he had sat down beside her.

"Are you not Celia Schmidt?" he had asked.

She remembered how she started with surprise.

"Er, yes," she had said. "Why?"

"Your brother," he replied, "poor boy, is a prisoner of the Germans."

It was true. She had received a letter from the War Department, a week before, notifying her of the fact. And two days later, several of the papers had printed the news of his capture. He had been a gunner on a Flying Fortress, which had been shot down in Germany.

"Yeah. That's right. The poor kid's a prisoner of those dirty murderers."

"Ah," he had sighed reflectively, "it is such a pity. If only his name were Jones or Brown, But no, it is Schmidt."

"Say, are you nuts? What's the idea of comin' here and—"

"Gently, my dear Miss Schmidt. It is not necessary to raise the voice."

Then he had told her about the fascists considering her brother as a German because his parents had come from there. The blackmail had begun in that second, when he saw how agitated she became at the visions he brought up. And now he was saying she did not have to do any more of these things. Except one . . .

"What is it?" she asked quickly. "What do you want me to do?"

He sat down opposite her and began to talk. Or rather, think aloud:

"It makes such a fine pattern. This professor, who is a mathematical genius. And Gimme, who is a mechanical genius. And myself, with my genius for sabotage. But this time, there will be more than sabotage. For after Gimme finds out what is wrong, I will get the professor's formulas and then—wreck the machine. It will be the greatest achievement of my career. With such a machine, the Fatherland will be invincible. This machine can only reproduce small things; but a larger machine will reproduce larger ones. Cannon even."

The woman sat there, her jaws slack in wonder.

"And that," he suddenly spoke to her, "will be your job. To get the formula.

Yes. In a few days I will introduce you to my friend Gimme. As the professor says, he is a mechanical wizard. Soon he will find out what is wrong. The professor will re-write his formulas and then—" he paused and grinned wolfishly at her—"then you will contrive to get Gimme to steal the formulas. One night the police will arrive and find the professor dead, the machine wrecked and Gimme present, very drunk."

He laughed aloud in pleasure and added:

"Is it not a beautiful plot?"

She could not repress the shudder which came over her. He saw it and standing up, he said in dismissal:

"Go. I shall call you when I'm ready."

GIMME hadn't found out what was wrong. When Slipworm and Shmutz came down the next morning, they found him deep in work over the wiring system on the small board.

"Nope," he said to the professor's questions. "I didn't find out what was wrong. But I c'n tell you this. Whoever set this up, went about it the long way. "Look," and he showed how he had devised a short cut.

They labored over it all day. And for several weeks following. But there was no change in the situation. The machine seemed human in its stubbornness.

If there was no change in the machine, there was in Gimme. Shmutz had become his shadow. They were inseparable, night and day. Even the professor, wrapped up as he was in his problems, noticed it. Gimme had begun to shave every day. He had become more neat and clean in his appearance. And he stopped drinking. All because of Shmutz . . .

"What'll people think? Shmutz said one night. "What does your wife think of all this drinking?"

"Ain't got no wife. And don't care what people think," Gimme replied.

"Not even a woman friend?"

"Say, what woman would look twice at a broken-down wreck like me?"

Shmutz detected the longing in his voice.

"Perhaps if you were to become more clean in your habits, stop drinking, get some clothes, become more respectable, then perhaps some woman would notice you."

"Ah nuts!" was Gimme's reply to that.

But he had come down the very next day with a clean shave. Each succeeding day saw a change in the man. It culminated in a new suit. Then it was that Gimme asked Shmutz:

"Look Smitty, where c'n I get a room. I'm gettin' tired of the flop I'm stayin' at. Too many 'boes."

"Why I think there is a room at my hotel that is vacant."

Shmutz knew then that Gimme was ready for Clarice.

Early one evening, as they were leaving the laboratory, Shmutz said:

"How about relaxing tonight, Gimme? Come downtown with me. We'll shoot a game of pool and maybe see a movie."

"Yeah," said Gimme, "think I will. Need a little rest anyway. That damn machine!" He spat on the floor in vexation. "No matter what I do to it, it just doesn't work."

Shmutz saw to it they got off at State and Van Buren.

"Oh say, Gimme," he said, as though he was reminded of something, "I've got to stop in at the Glitter Bar for a moment. Come on in with me."

The bar was crowded, as usual, with service men. A dark-haired woman in a low-cut gown was doing her best to sing above the noise of the crowd. They

found a small booth in a corner.

"Be right back," Shmutz said.

He returned in a few moments. With him was a slender woman with dyed blonde hair. Stage makeup lay thick on her face.

"Look, Gimme," he said. "Met a friend of mine up there. Want you to meet her. Miss Le Clair—Mister Gannet." He turned to Clarice and said, "Gimme, here, is one fine guy and a wonderful mechanic."

Gimme became red of face and mumbled a "pleased to meet'cha ma'am."

"Look, Smitty," Gimme said out of the side of his mouth, as the two sat down, "the front handle is John."

Shmutz grinned. Gimme's embarrassment was so obvious.

SHMUTZ carried the brunt of the conversation. Gimme sat silent for the most part, contributing an "uh-huh" or "no," as the occasion demanded. The girl, too, sat silent. She seemed more interested in her drink than in the talk.

Suddenly Shmutz looked at his watch.

"Sorry, folks," he said, as he slid out of the booth, "but I've got to go now. See you at the hotel, John. And you, Clarice, don't flirt with my friend. He's very shy."

Gimme's face flamed scarlet. Strangely, Clarice didn't laugh.

"He is shy," she thought. "So this is the man!"

She had been giving him a close going over with her eyes. What she saw rather pleased her. Gimme was not her idea of a handsome man; but there was something about his rugged features and huge figure that gave her a feeling of security. She watched his hands—strong, blunt-tipped fingers playing with his beer glass—and knew they were the hands of a man who created things.

"Ronald has told me about you, John. He thinks a lot of you."

"Yeah? Oh, Smitty's a good guy, miss. Shoots off his lip too much though."

"You don't know much about women, do you, John?" she said smiling. She didn't know why she said that. It wasn't what she intended to say.

He looked up from examining the table top. Something about the way she looked, as though she had said, "Let's be friends," made him feel inexplicably and instantly at ease. He smiled in return and said:

"No, miss, I don't. Guess I've never had the chance to find out."

That broke the ice. They chatted amiably about various things until her break was over. She got his promise to come back the next night before she left.

Later, in Shmutz's room, Gimme wanted to know all about her. Shmutz invented a story for him. He saw Gimme was deeply interested in her.

In a short while, the two became fast friends. He would meet her at the Glitter Bar when he was through at the laboratory and sit and talk through several show breaks. Then he would go back to his hotel and eulogize her to Shmutz. He never wondered at the pleased smile the other wore.

Soon he began to talk of the machine, of the work they were doing and of what it would mean in the war effort. He spoke, with a pride in his voice which old acquaintances would never have understood, of his part. Then one night he came out with that for which she had been waiting yet dreading to hear.

He had come in that night a little later than usual. She saw in his face the signs of great inner excitement. His words were:

"I think we've got it, Clarice. I thought it was in the balance of the tubes and tonight," he paused to draw a breath, "tonight," he said satisfyingly, "we check on what I found. According

to the professor it must be the thing."

"That's wonderful, John! When will you know whether you're right?"

"Tomorrow, when the professor rechecks the formula he's doing tonight."

HE LOOKED past her with unseeing eyes. A great dignity lay on his face.

"Y'know," he said in a low voice, "I've been a bum for many years. Never gave a damn about myself or anyone else. Then this little guy comes along. An' he gives me that stuff about love of country. So I think he's nuts." He sighed deeply and looked directly at her. "Y'know, Clarice, that little guy's all right. And he's got the right idea. He doesn't care about anything except gettin' that machine to work. Because, like he says, 'it's going to save a lot of lives by shortenin' the war.' He says our lives don't mean nothin'. I guess he's right too."

It was the longest speech he'd ever made. He saw the surprised look on her face. It made him feel embarrassed. and then he knew he had to say something else too.

"Yeah. And' here's somethin' even funnier. You had a lot t'do with it. You never laughed at me. Or ribbed me. No, you've been a great guy, Clarice, an' I— What's the matter?"

She had suddenly burst into a flood of tears. She scrambled out of the booth and before he knew what was happening, she had kissed him on the mouth and whispered:

"Thanks, you big lug. I'll never forget you."

She was gone before he could stop her.

For once, he did not go back to his room after he left the Glitter Bar. Somehow what he felt then he could not talk over with anyone. For hours he walked the streets, his mind churning.

SHMUTZ was going over a report he had just finished. He read what he had written:

"I am pleased to report that very soon I shall have good news for you. The difficulties I had told you about are about to be ironed out at last. My friend has found the solution and we are but waiting for the proof. When that comes, I shall have—" he stopped reading and turned to see who had come into the room. It was Clarice!

Yet it wasn't. This woman who stood before him, straight figured and resolute was not the frightened mouse he knew. There was purpose and courage in her bearing.

"And what," he arrogantly demanded, "are you doing here at this time? You should be with that moron Gimme."

Her lips creased in a thin smile.

"Reinhold," she said softly, "you should never have introduced me to your friend. It was the one mistake you made."

He arose and walked toward her. There was menace in his face but if she saw it, it made no difference for she stood her ground even when he stopped before her.

"What do you mean?"

"Just this. I am *not* going to do as you want."

He smiled the smile she feared. The one which presaged the blow. But all fear had left her. Even after he struck, there was only the dull pain from his blow, nothing else.

He came back to his chair, sat down and asked in a pleasant, amused voice:

"That is very, very interesting, my dear. Tell me, what brought on this change of heart?"

"Nothing," she replied. A tiny trickle of blood made its way from a corner of her mouth.

Shmutz became interested in his fin-

gernails, his face expressionless.

"So," he said, not looking at her, "it was nothing. A whim, shall we say? Dear me, how pleased your brother will be when the lead-tipped whip burns across his flesh to know that it was a whim that brought on that pain. He will think of you with love when the iron shod boot strikes deep in his groin and bless you for this whim." He looked at her. His eye held a savage lust. The scar on his face burned red against the suddenly pale skin. And his lips sent out torturing, pain-filling words:

"So it was nothing which made you change your mind. Good! Then you will feel no sorrow when you learn how he died. In pain and horror, cursing you, who gave him the death he will have."

All color had fled from her face. Even her lips showed pale. But her eyes gave away the pain his words brought.

"I know, Reinhold," she whispered. "You have told me many times of his death to be. And now it doesn't make any difference. His death or mine. But there isn't going to be any more death because of me. You see, Reinhold, I am going to the police and tell them what I know. That won't be pleasant for you, I'm sure."

Her shot had struck home. And she instantly realized she had made a mistake. She should never have said that. She turned and started for the door.

Too late!

HE WAS on her, his fist lashing out in a terrific blow. It caught her just below her left ear. There was a loud "crack," like breaking wood and she fell sideways against the sofa. She hung there for a part of a second, then rolled to the floor.

A single glance at the grotesquely twisted head and he knew she was dead. He had broken her neck with that blow.

He looked somberly down at her for a second, then went back to his chair and sat down. After that one look, he paid no more attention to her than if she were another rug lying there.

His lips were tight-pressed in sudden purpose. There were two things he had to do. Get rid of her body; then wreck the machine. But how? The solution came to him in a flash. It was so simple, he laughed aloud in relief.

He walked to his closet and took out a suit. Then he disrobed the corpse and dressed it in the suit. She had been a tall woman and the garment fit fairly well. He then took off her shoes and laced a pair of his onto her feet. They were loose but not loose enough to fall off. Next, he took a cap and rolling her hair up tightly, fit the cap over her head. Then he splashed whiskey over her. To all outward appearances it was a drunken man lying there.

He lifted the lax figure from the floor and was thankful for her lack of weight. He held the dead body close to him and staggered out of the room with it. The freight elevator was a few feet from his room. He knew it would not be in use at this hour. It brought him down to the alleyway. He staggered out to the street and hailed a passing cab.

The driver looked at him curiously, as he gave the address—"Eighteen hundred and six Elston Avenue."

"Too much to drink, eh?" the driver said with a grin.

"Yeah," Shmutz replied laughingly. "Couldn't take it. Passed out."

They pulled up before the building which housed the laboratory.

"This it, mister?"

There was surprise in the driver's voice.

"Yes," Shmutz replied casually. "We work here. I'll sober him up inside."

The driver shrugged his shoulders and put his car into motion again. He held the dead body upright until he saw the cab lights disappear around a corner. Then he slung it across a shoulder and walked to the door of the building. He fished in his pocket for the key Slipworm had given him when he first started to work there. The door closed softly behind him and his gruesome burden.

He switched the laboratory lights on and dumped the body on the floor. The mass of machinery stood silent before him. Inexplicably he shuddered and felt fear of the machine. It was fearsome in its power. The feeling passed quickly however. He had work to do!

QUICKLY, he set about undressing the body again. He rolled the clothes up into a neat, small bundle. Then he threw the switches on the control boards. The room filled with the sound of the machine's breath; the vast humming sound of its power. Again he slung the body over a shoulder and walked to the opening in the center of the machine.

He sighed with relief when he saw the body would fit into the opening. He left it hanging over the edge and went back to the control board. He set the dial over to the one hundred and seventy-fifth degree. The pointer slowly moved to the appointed notch and stayed there. The disintegrator rays were on!

Slowly, carefully, he tipped the body into the opening. He watched it fall into the web of purple lights, watched it glow for a second and when it disappeared, a smile of triumph lighted his face. That was done! Now to wreck the machine.

The tubes. They held the mysterious Z-ray. He had to smash those. There in the tool chest was a heavy Stillson wrench. He was bending down to pick it up when he heard a sound.

Panic filled his breast. To be caught now, when he was so near success . . .

He turned and leaped for the wall switch. He did not notice the pocket of his jacket had flipped the switch which released the pointer on the large dial. He had ears only for the sound he heard beyond the door. Quickly he gathered up the bundle of clothes from the floor and stole out of the door. There was nothing, no one, in the other room.

Somehow, he could not go back again. Panic had released a thousand fears in his mind. He had but one thought—to get out and back to his room, as quickly as possible.

Slowly, the pointer crept across the face of the dial. The humming grew louder, higher. And the pointer came to rest on the last degree. There was a loud crackling sound, as of ice breaking and the humming died down.

Weird, strangely colored circles of light began to form at the base of the opening in the machine. And from the opening itself, an unearthly glow came forth. It was as though the machine had become alive and the strange light spiraling upward was its breath.

REINHOLD SHMUTZ could not sleep. He had come back to his room and had gone to bed. He had noticed that Gimme's room was dark. But Shmutz was too perturbed to care much. He wanted to be alone.

Now that he was alone, he did not like it. He kept hoping that Gimme would knock on his door. But only silence answered his wish. He stared at the ceiling above him. And a face formed from out of its dark depths.

He felt his throat go tight and his

mouth became suddenly dry. Cold, clammy sweat formed on his forehead. The face! It was that of the dead girl. The face was hers, yet not hers. He had never seen such a look of stern austerity on her features before. The look accused and sentenced him at the same time.

He closed his eyes in terror. The face was gone when he opened them again. He leaped out of bed and turned on every light in the room. It was an hour before he went back to bed.

He had been warm when he returned. So he had thrown his windows open to let some air in. Now, as he lay there in the darkness, a strange thing happened. Little figures, each glowing with some queer, inner light floated into the room. He watched them with an odd air of detachment. They floated about for a few seconds, then settled over his head. There were dozens of them and more kept coming in through the windows.

He heard the sounds of tiny voices. They were calling him!

"Reinhold! It's me Clarice! Look, here I am."

They kept floating around, calling the same thing over and over again.

He noticed a strange thing about the tiny figures. Each head was bent at a horrible angle.

"Stop it!" he screamed. "Leave me! You are dead. Do you hear? Dead!"

"No!" the tiny voices replied. "Not dead. Not yet. You forgot something. The machine."

He leaped from his bed and began to strike at them. Futility! His fists passed through the tiny figures, as though they were composed of smoke.

They began to float back out of the window and as they left their voices tolled:

"Not dead, Reinhold. Not yet. The machine!"

"Yes," he chattered to himself, "the machine. I must destroy it."

He began to dress in a frenzy of impatience. And as he dressed, he murmured mad phrases to himself:

"They came from there—The Life Machine, Slipworm called it. He was right—it has given life back to her. I must wreck it—she must stay dead."

HE NEVER knew how he got there. Nor did he remember switching on the laboratory lights. He only knew what he saw.

Waves of light came from the machine. Strangely colored, shimmering light. And nesting on each light wave were dozens of replicas of Clarice! The room was filled with the miniature figures. They floated close to him and smiled into his eye. He smiled in return. But now there was madness in his brain. His smile was the drooling leer of an idiot.

He remembered the wrench. He stooped and lifted it from the tool chest. Slowly, with shambling steps, he started to the opening. The wrench hung loosely from his finger tips.

The voices urged him on.

"The machine," they trilled, "destroy it, Reinhold. Yes, yes, destroy it!"

The grin on Shmutz's face became alive. It became a mad, rollicking laugh. He stood above the opening and roared with laughter.

"Yes," he screamed, "destroy the machine. And you too! For good this time."

He lifted the heavy wrench above his head and hurled it—straight at one of the Z-ray tubes. He never knew whether it struck or not. As it crossed the path of rays there was a huge burst of blinding, golden light.

A thousand needles came alive in the brain of Reinhold Shmutz. Horrible, burning pain gnawed its way into every

fibre of his body. He staggered back, his fingers clawing at his throat, his face, his body. A hundred hammers struck sledge-like blows at his skull. He reeled away from the machine. His feet stumbled over something and he fell to the floor. Blindly he reached out and he felt his fingers touch warm flesh.

For one last second he saw again—saw a face close to his own, looked into triumphant eyes, and felt twisted flesh with his finger tips. Then he closed his eyes—*forever.*

GIMME was excited.

"I was walking down Michigan Avenue, when it came to me," he began. Slipworm nodded his head and opened the door. His hand stopped in its tracks. He had reached for the light switch. It was an unconscious gesture. But the gesture was not completed. Nor was what Gimme had begun to explain.

The lights were on in the laboratory. And so was the machine. They could hear its hum, strangely muted now. Their eyes, however, were riveted on the two bodies near the control board.

"It's Clarice and Smitty," Gimme whispered. He ran forward and knelt beside the bodies. Slipworm joined him. They saw that the man's fingers were embedded in the girl's throat. A look of unutterable horror and agony was on his face. They thought it strange that her face was so composed. She had died a violent death, yet she looked as though she died happy.

Tears coursed down Gimme's cheek. His fingers caressed the flesh of her cheek. Then Slipworm said:

"Best call the police. There is nothing we can do for them."

The thick-bodied police lieutenant watched Gimme pace up and down for several seconds. The bodies had been removed. He was head of the homicide detail and he had remained to ask the necessary questions. Bewilderment fought with anger in his face.

"Stop that," he barked at Gimme. "And come back here. I gotta ask you some questions."

"Damn you," Gimme stopped and cursed in reply. "I've answered all your questions."

"Easy, Gimme," Slipworm cautioned. "This is necessary. Let us be reasonable."

Gimme's face looked tortured.

"What the hell does he want of us? A blind man could see what happened. This Shmutz strangled poor Clarice. How the hell do I know how he died? What's more, I don't care. The rat deserved it."

"I agree," said the lieutenant. "We searched his apartment and found enough evidence to have a dozen men shot. He was a saboteur. There was a little notebook with a record of his sabotage. He was a hell of a busy guy. And this girl, this Clarice Le Clair, was his accomplice, poor kid. Y'know," he said in retrospect, "there's something wrong with all those guys. They're not satisfied with just doing these things; they got to brag about 'em.

"This guy was no exception. That's how we know about the girl."

GIMME had stopped his pacing and was listening, all attention now.

"Sure," the policeman continued, "this guy had it all written down. How this girl's kid brother is a prisoner of war and how he blackmailed her into thinking if she didn't do as he said, the Germans would torture him. Seems silly people fall for that stuff, but they do. She did!

"There was lots more there. Especially about you, Professor."

"About me?" the professor stared.

"Yep. You and this machine you made. Didn't make sense. What's it all about?"

"I'm sorry, Lieutenant. But that is something I can tell only to an authorized agent of the Government."

"I'm afraid you're gonna do just that," said the lieutenant. "I'm waiting for the head of the F.B.I. now. He'll be here any minute."

They didn't have long to wait. A tall, gray-haired man came into the room.

"So you are Professor Slipworm," he said in greeting, as he shook Slipworm's hand. "After reading Shmutz's autobiography, I am very much interested in you. You and this machine that Shmutz thought would win the war for Germany."

"Not for Germany, sir. For us!"

"That's good. Glad to hear it." There was a smile in the other's voice. "Tell me more."

So Slipworm told of his experiment. He concluded by saying:

"Gimme called me. I picked him up in the Loop and we drove out here. He told me that he had solved the mystery of why it doesn't reproduce in entirety. Then we opened the door and—that was all."

The government man turned to Gimme and said:

"So you know the answer, do you?"

"Sure," Gimme replied. "It was there all the time, only we didn't see it." He walked to the control board.

"See this," he pointed to the large dial. "Well, that's got one hundred and eighty degrees on it. In other words, it's a half circle. When the pointer reaches the last notch, the machine is really only at *half power!* Naturally, when it starts reproducin', there's somethin' always missing. The idea is to get a dial with the full three hundred and sixty degrees on it. Graduate the *whole* power through the circle. Then, an' I'll bet my life on it, it'll do what it's supposed to do."

Slipworm had turned the machine off, when the police came. Now the Government man said:

"Let's have a demonstration of this wonder machine."

Slipworm set it going. When the dial reached the point where the machine was ready to receive material, the agent offered his watch.

"Oh no, there'll be something missing from it," Slipworm reminded him.

"Go ahead," the other said. "It's not an expensive one. If it comes back ruined, I'll get another and let you use it when you have this thing all set up."

THE professor smiled and took the watch. They watched the miracle of disintegration and came back to the control board. Gimme gave the pointer its final twist. In a few seconds the watch reappeared. Gimme brought it back and they all looked at it. There was nothing wrong with it! Nothing was missing from it!

Quickly the professor set the metal ball spinning. In a few seconds hundreds of watches appeared on the light spirals. Nor could anything wrong be found with any of them.

"Gimme," the professor chortled in glee. "It works! The dream is reality. My Life Machine—it works!"

"Yes, I see it does." There was awe and a profound respect in the F.B.I. man's voice. "But why is it working now?"

Where Gimme found the words, he didn't know. They were in his mouth and said before he could think:

"The professor called it his Life Machine. There is no life without a soul. Maybe that's what happened. Clarice gave her soul to the Life Machine."

AMAZING Facts

By
A. MORRIS

ONE of the great sources of strength of the American Army in this Second World War has been the power of its artillery. Every attack, every landing operation, every movement of our armed forces is preceded by an intense artillery barrage designed to batter down the defenses and break the morale of the enemy. German prisoners claim that it is this overwhelming curtain of fire that has made possible the quick successes of the Allies.

Yet there is another barrage to which not just one nation but the entire earth is subjected which makes modern shell fire seem puny and ineffective. It is the bomb load of meteors which ceaselessly streak toward the earth.

It is a known fact that between the worlds there are fragments of rock and metal, pieces of disintegrated planets which, attracted by the gravity of the earth, travel toward it at speeds ranging from 15 to 50 miles a second. Compare that speed to our fastest airplane or even to the velocity of a bullet and you can begin to understand the force and strength of these special bombs.

Yet it is this very speed which protects the Earth and its inhabitants from destruction by the meteors. For as they enter the atmosphere the friction caused by their passage through the air, together with the resistance of the air itself heats the meteor so that it completely dissipates before it reaches the area 50 miles above the Earth. It is estimated that only one in a probable 20 million ever reach the surface of the Earth itself and then, the power of the meteor's fall has been so weakened that the landing takes place gently with no marked effect.

* * *

DO YOU know that many animals have—like we do—definite patterns of family organization? It is not known whether Uncle Ed Chimpanzee lives in the "guest room" for three months, or whether Cousin Matilda Kangaroo plays the radio till midnight every night, but pretty much is known about the private family organization of one animal, the baboon.

The baboon family group consists of a male overlord, his female or females, together with their young, and may sometimes include one or more "bachelors" or unmated males. Although these bachelors are not an essential element in the party, they have been observed to remained attached to it for as long as a year. Their interests seems to be held by the group mainly because of the females; but sometimes the overlord appears to attract them as followers.

"Bigamy"—a taboo in our society—is not so common among the baboons either. No, they like "trigamy," "quadrigamy," and the higher orders of polygamy! One male, the biggest in the group owned eight females; three had three each; three had two each; and five just had one mate.

* * *

THE future of the human race is in great peril. Scientists claim that the declining birth rate is reaching alarming proportion. They maintain that the attitudes of modern urban couples have reached a dangerously negative point of view in regard to children. It is no longer considered "fashionable" to raise a large family.

Dr. S. Thompson of the Scripps Foundation for Population Research asserts that "there is no future for a nation if a considerable part of its people persistently refuse to reproduce." City populations are not reproducing themselves, and rural populations are no longer able to make up the deficit.

Statistics show that, on the average, thirty per cent of the urban women are childless and twenty per cent more have only one child each. Science, rather than blaming itself for providing the devices which have made child-birth largely a matter of choice, now chooses to place the burden of blame upon a society that has suddenly ceased to organize their lives around children. Instead, ambitions revolve around the achievement of purely selfish desires, the acquisition of goods, luxuries which can be purchased with the dollars saved by not raising a family.

The future of the world is in great danger. The prosperous, the dominant groups refuse to propagate themselves as a matter of choice, while in the areas of disease and ignorance, of famine and hardship, people are reproducing themselves in great numbers. The disastrous turn the history of the last fifty years has taken, a turbulent history which resulted in two World Wars, has made the death rate far higher than the birth rate. It is estimated that World War I turned back Great Britain's home population at least one generation.

One by one he threw the straw-dummy parachutists out of the plane; while the machine on his breast went on ticking

INVASION DUST

By DON WILCOX

A man made of iron couldn't have gotten that message through; but a man of stone could!

JUNE sixth—the *invasion*—at last! The zero hour had struck. All at once the thick gray skies and leaden waters between England and France became the world's busiest traffic-way. Four thousand ships, numberless troops, gliders, guns and tanks streamed eastward to strike the German beast.

"And to think that Big-Noise Bill had lived for this day," Lou Wagner muttered as he threaded his way through the plane's strange cargo. "If Big-Noise hadn't volunteered to substitute for that sick Looey on the Sunday milk run, he'd be with us this morning. But he *would* volunteer."

"He would," Captain Marchand echoed.

With his usual ease March sat in the pilot's seat waiting for the take-off signal. Any minute now. The motors roared with eager thunder. Above the field lights, the skies were graying. Nine planes abreast, the vast air trains were taking to flight. Already the invasion was two or three hours old. Every passing minute heightened the fever of those awaiting their turns.

March appeared as cool as ever. But Lou Wagner knew that the veteran pilot was alert to everything as he sat there, dryly commenting about their late friend.

"Big-Noise was a kind of superstitious cuss."

"He was fatalistic about this day, you know," Wagner admitted. "But he figgered his luck would hold till the invasion began."

"You say the ack-ack got him through the heart?"

"Damned close to it. My girl and I had a few words with him in the hospital. He was dying. God, if it hadn't been for the weather holding us back a day it wouldn't have happened."

"It's no good talking about it," said March. He set his hand to the stick. A few more seconds to wait. His voice softened to a low mumble. "Big-Noise was an all-right guy. He and I had our

disagreements—his superstitions, for one thing. But he was okay."

"Sure. You should have heard the way he talked to Helene and me." Wagner took a deep breath. "It's hell he couldn't have lived. He had a special mission for today, you know."

The motors accelerated. "All set, Lou? . . . Here we go . . . "

The plane rose. With the sickening sensation, Lou Wagner's thoughts whirled back to the momentous business at hand. This was invasion! This was it. And there was a thrill about it that made one's heart beat wildly.

He glanced through the left window. Eight planes formed the V beyond his left wing. Along with them he and March were sliding up through the semi-darkness with all the ease of a rehearsal flight.

Now he looked back through the darkness of the plane's interior to survey his fifty-seven straw passengers. These were secret weapons of a sort—fifty-seven straw dummies that would ride down like sky troopers on parachutes and set off explosions to confuse the enemy.

They were riding quietly—all but the fifty-seventh. For some reason that dummy in the rear of the plane had shaken out of position and was lying upon the other dummies' heads, its arms outstretched. *It was moving. It was crawling forward.*

"Who's there?" Wagner snapped. He reached for his pistol.

"It's me," said a low, thick voice. Darkness obscured the face. But that voice was like something returned from the dead. The figure groped its way forward until Wagner could see that the features were those of Big-Noise Bill.

March, half turning, barked. "What you got back there, Lou?"

"I guess we've got Bill Bradford." Lou Wagner's slow-spoken words sounded like an announcement of ghosts. His throat tightened.

"I thought he was dead." March turned his head long enough to stare full into Big-Noise Bill's face. "I thought you were—"

"Dead, huh?" The ghost himself spoke. "Maybe I am. But I'm still flesh and blood. And I couldn't miss the invasion."

For no reason, Lou Wagner gave a nervous laugh. But neither Bill's looks nor his tone of voice were anything to laugh at. His chest had caught a bullet. Wagner knew that for a fact—and less than twenty-four hours ago he had been on the point of death. Now he clambered down to his feet, a man sick and in pain. His gaunt face, his hollow eyes, his expressionless lips made Lou Wagner shudder.

Marchand, at the controls, was too busy to catch these details. He seemed to think Wagner had deceived him, and he kept up a low, disturbed mumbling.

Big-Noise spoke again, in a slow, heavy voice. "Don't be sore because I showed up, March."

"Hell, man, we're glad to see you. Damned glad—you now that." March tossed a reassuring look over his shoulder. "It's just the shock of seeing you alive, after a halfway honest guy like Lou says—"

"And don't blame Lou. If you want to blame anyone blame his girl friend. Just before I passed out, she fixed me up with *this*. That is, her zany uncles did."

His gesture toward his puffed out chest referred to some concealed bandages, Wagner supposed. Wagner's eyes must have widened as he took in the manifest facts. Some miracle had occurred. Helene's "zany uncles"—it was he himself who had called them

zany, for Big-Noise Bill had termed them geniuses from the start—had evidently come through with a life-saving experiment. Wagner wondered.

THE plane was moving over the channel. The morning light grew whiter, though gray mists blanketed wide patches of the lead-blue sea. The three men, as silent as their fifty-six companions of straw and cloth, gazed downward, trying to take in all the signs of movement around and beneath them. What they couldn't see they could guess. The sea and air were alive with armies and arms. The vanguard of this mighty military machine had at last established a path—perhaps a score of paths.

"Ack-ack!" Big-Noise couldn't have said it in a more ominous tone. Not a tone of terror, but one of cold fatalism. A few tracer bullets came up through the gray like strings of red beads. One of them thumped through the left wing. Soon the stream of red dots fell short.

"The coast is under us, anyway," Wagner observed with something of relief. Somehow he had expected these skies to be thick with enemy resistance. So far the chief problem was to watch out for other Allied planes and gliders. They were everywhere.

The sky train roared on. There was a breathing spell, and Wagner took advantage of it.

"Here, Big-Noise. Let's see that chest. You've got some explaining to do."

What he found within Bill's shirt could hardly be called a bandage. It was a metal instrument that glistened like a band master's silver helmet. It was fastened firmly over Bill's heart with girdings of black tape. In general outlines the arms of tape extending from the conical metal plate looked like a giant insect.

"What the devil are you doing with a silver spider nesting on your chest?"

Big-Noise motioned Wagner closer. "Can you hear it? It's ticking like a clock. Your zany uncles—"

"An artificial heart?"

"A crude heart, they said. They'll tell you everything—they and Helene. She went to them as soon as you left, and within an hour they slipped into the hospital to see me. Since I was dying anyway I had nothing to lose."

"But you're not dying. They've given you life!"

The tall, hollow-eyed Bill shook his head slowly. "Remember a few hours ago when I put Helene's hand in yours. Remember what I told her? You'd be back. But me—the little birdies have told me my time is about up."

"But now—with this artificial heart . . ."

"It's a heart with a clock. It's ticking off my last hours," said Big-Noise Bill in his quietest voice. "Ask our girl friend—*your* girl friend, I mean. She'll tell you all about it. I always told you she was a mysterious person. . . ."

CHAPTER II

Helene Danzelle's Uncles

THEY had met her in April, two months before the invasion. They had first seen her giving a beggar a coin in the park. She had hurried on her way. They had followed, at a safe distance, betting each other that she was bound for some swanky palace. Instead, she led them a merry chase to the slums, and there she met a group of ragged children. The party of them went on to the first vacant lot, and there she went to work helping the kids make a garden.

"What do you know about that?"

Big-Noise had said. "I still think she's an actress. Those jewels. That face. That chassis—"

"Why don't we walk up and get acquainted," Lou Wagner had suggested.

"What, with all those kids around her?"

"I think I'd like a date with her."

"Two of us. Of all the girls I've seen in England—but we wouldn't have a chance with her."

"You go on back to headquarters," said Wagner. "I'm gonna help those kids plant radishes."

So Big-Noise and Wagner spent the afternoon spading up a vacant lot while the slum kids asked a lot of bright-eyed questions about America, and Helene Danzelle looked on with amusement.

A few evenings later she met them at an amusement palace, and this time the sight of her fairly knocked them off the Christmas tree. She wore a white tailored suit and enough bright colored ornaments to start a jewelry shop. One of her gold bracelets was at least two inches wide. One of her rings was set with a huge topaz, which, Wagner noted, was a perfect match for her yellowish amber eyes. Her hair was reddish gold in bold waves that hung loosely at her shoulders.

Her dazzling beauty was enhanced by a theatrical manner. Wagner whispered to Big-Noise that he had her all figured out to be some famous European actress.

Big-Noise was the first to dance with her. But Wagner strolled through the court garden with her and was getting along fine until Big-Noise came out to join them.

Helene Danzelle could laugh readily. She could make them forget their intense minutes of riding bombers over the continent. But she had little to say about herself, and Bill Bradford, with his weakness for superstitions and mystical ideas, would say to Lou in confidence, "I'll bet there are a thousand skeletons in her family closet. Who is she anyway? What do we know about her family? Does she have a father and a mother?"

"She has two uncles—her father's brothers," said Lou, "if that makes any difference to you."

"It's uncanny the way she knows things before they happen. She tries to conceal her knowledge, but, by George, I'd bet a case of whiskey she already knows the invasion date. You just listen when she starts talking, and see how much you can read between the lines."

But Lou preferred not to bother his head about such matters. She was a good-looking girl, a clever girl, a friendly girl. And she was coming his way.

ON THE afternoon that Lou Wagner and Helene had their first date alone, Bill crashed the party. He found the couple in a booth, eating sandwiches and cracking wise. They didn't look too happy to see him walk up.

But Bill Bradford was on fire with big talk about the recent raids on the Reich. He just had to talk—and loud. When he was in a mood like this, about all that his friend Lou could say was, "Now you see why we call him Big-Noise."

That was enough to say. The name did him in. Once he had been proud of it. But his big noise didn't go over with Helene. From that day on he preferred to date Lou alone.

"There's something mysterious about that girl," was about all Bill could say.

Then he met her two uncles. If she

was mysterious, they were positively weird. All of Bill Bradford's superstitions rose to the surface from the first hour he talked with them. In fact, that was why he took to the old codgers.

"Would you believe, young man, that we can see your fortune in a jeweled kaleidoscope?" one of them said.

"I've had *my* fortune told before," said Bill, alert with interest, "but never by a kaleidoscope.

The two uncles led him into the circular, ivory-walled room where the roof of glass showered sunlight on the bright upright object in the center of the floor. But for the moment Bill was most interested in the comic appearance of the two old men.

Both were in their sixties. One was tall, thin, and droopy; the other was short, chunky, and full of snap. The latter did most of the talking, and he vigorously waggled his broad head of fluffy white hair that must have been cut to the pattern of an inverted bowl. He had a frog voice.

"I'm a doctor and a scientist," he croaked. "But all of Helene's friends call me Uncle Pete."

"They call me Uncle Rudy," cackled the tall, thin one, caressing his long gray beard. "I'm an architect, a chemist, an artist, an electrician, and too many other things to mention."

"Mostly he's conceited," Uncle Pete added. "Come this way, Lieutenant Bradford—"

"Just call me Bill," said Big-Noise, in the interests of being congenial.

"Good. Here, Bill, is the most remarkable machine for seeing the past, the present and the future that our two master minds could devise. A jeweled kaleidoscope,—"

"It was *my* idea," Uncle Rudy put in, slumping langorously in one chair and hooking his feet over another. "All Pete did was build it."

"It's a kaleidoscope," Uncle Pete continued, "containing some of the rarest jewels of India. You never know what it's going to tell you next—that is, unless you bother to ask some specific question. For example—"

"The invasion date turned up yesterday," Uncle Rudy volunteered. His curt brother hushed him with a snap of the fingers, and Uncle Rudy, just teasing, cackled with laughter. "Aw, I wouldn't tell, Pete, not really."

"Here we are, Bill," said Uncle Pete with a brisk effort to restore his ruffled dignity. "Step right up."

THE object in the center of the room was a four-foot chromium cylinder mounted on a little pyramid of black marble. You could step up three steps, lean on a brass rail, and look straight down into the cylindrical shaft to see what was going on.

Uncle Pete touched a button. The drums at the base began to rotate like overlapping roulette wheels. Bill looked in. What he saw was dazzling bright light spinning in a thousand little flickers of color.

Then the spinning slowed down to a stop, and the lighted jewels fell into chance arrangements. The triangle of mirrors in the cylinder's walls turned the pattern into a perfect hexagon. Every jewel that shone through that elaborate design seemed to have been placed with a miraculous precision.

"It's a wonderful jumble of color," Bill mumbled uncertainly. "What am I supposed to see?"

"It's no jumble," said Uncle Pete. "A jumble is something without meaning. Every hexagon that turns up is supercharged with meaning. Only you have to learn to read them. It's much more difficult than crystal gazing."

"Well, I don't see any meaning to

this present arrangement of color."

"Let's have a look," said Uncle Pete impatiently. "Let me see. Ah! Ahhh! It's coming clear — yes. A chance bit of history. This is a scene of the ancient barbarians moving down on Europe."

Uncle Rudy scoffed. "Barbarians! Whenever Pete can't make it out he calls it barbarians moving down on Europe. Let *me* see."

He undraped himself from the chairs and bent over the rail. "Hmmm. It's a scene from the end of a new ice age twenty-five thousand years in the future—and—aha! yes, indeed, there they come—new hordes of barbarians moving down on Europe."

The two old codgers fell to arguing as to whether they saw the ancestral grandfather of Attila the Hun or one of the illegitimate descendants of Hitler the Beast. Bill, for once, sat back and made no big talk.

Uncomfortable was the word for any of Bill's silences, for they gave him time to face the fact that most of his habitual bluster was a screen to hide his own uncertainties. He lived in a private world of uncertainties that hinged on luck, good or bad. He was always on the lookout for symptoms of changing luck. It was his habit to carry a pocket full of charms when he made his flights over Germany. Any little disturbance could puff up into a superstition. Once he had actually begged off because of a premonition that he would be a jinx that day, for the bombing crew.

And yet, for all his superstitions, Bill was no coward.

"Enough of this arguing," Uncle Pete said, "We must entertain our guest. Helene asked us to be nice to him so she could stay out longer with his friend."

"Telling his fortune might be nice," said Uncle Rudy. "Again, it might not. We never know what to expect."

THEY both turned to him and asked him to concentrate on his own future. For five minutes he concentrated while they allowed the drums to spin. The light of whirling gems flashed in criss-crossing paths of spangles all around the ivory room. Then the drum came to a stop.

"There it is," said Uncle Rudy.

Uncle Pete's fluffy white hair fell across his cheeks as he bent over the cylinder. When he looked up his comical face was strangely grave.

Uncle Rudy looked too, and he started walking away slowly without looking at Bill. "We'd better not tell you." The laughter had gone out of his voice.

"What's up?" Bill said reproachfully. "I can take it."

He walked across and peered into the cylinder. The jeweled pattern was much bolder and darker than before, a hexagon heavy with dark reds and bordered with a stony gray.

"Come on, what's the dope?" Bill insisted.

"You'd better wear a shield over your heart," said Uncle Pete. "About the time of the invasion there might be a bullet with your name on it. Maybe several."

Bill spoke loud and nervously. "Hell, that don't surprise me. Why should I be surprised, just as long as I get to do my part in the invasion. That's what I'm living for, isn't it?"

" You'll have plenty of steel in your tissue about that time."

"You're talking in puzzles," said Bill. "Do you mean steel nerves? Of course—"

"You'll have a special mission for General Eisenhower. An errand to the French Underground. Don't fail him."

Bill's eyebrows raised skeptically.

"I don't quite fathom that."

"Always remember," said Uncle Rudy, "that we're good at mending broken hearts."

"Double talk again," Bill muttered. "If you think I'm in love with your niece—well, I'm not. Not much."

"Don't be," said Uncle Pete, shaking his white locks. "A man who isn't coming back shouldn't fall in love."

"Hmmp. Pretty sure of yourselves, aren't you," Bill muttered with a show of temper.

But the two uncles paid no attention to his mood, now. They were pacing the floor, handing out puzzling comments right and left. Uncle Rudy came to him with medicine bottle.

"Better drink from this every day."

"What is the stuff?"

"Liquid stone and steel. It's the juice of a cathedral mixed with the nectar of an iron statue. Drink a little every day."

Bill took a sip of the cherry-red liquor. It tasted like fire. They put the bottle in his hip pocket when they led him to the door.

"Liquid stone and steel," Bill echoed as he walked down the street. "Now what did they mean by that?"

At the first corner he was accosted by a messenger from the Supreme Allied Command, who said, "Are you Lieutenant Bradford? . . . I've been looking for you. You're to report to Eisenhower headquarters tomorrow for a special D-Day assignment."

CHAPTER III

Under Water to the Underground

THE wind roared past the open side of the plane. D-Day was on, full blast, and March, Big-Noise Bill, and Wagner, riding over the thick of it, had already seen action aplenty. Now Wagner hurled the straw dummies with the one-two-three rhythm of a machine. They parachuted down slowly.

The first of them struck, at last, hundreds of feet below. It gave off a burst of fire.

The second landed and exploded. A third and a fourth blast of flame could be seen, following in rapid succession. Bill Bradford's heavy eyelids widened to see the effect. On a hillside far to the northeast a detachment of Nazi soldiers broke out of position and came racing down the long slope, on foot and in cars, to surround these noisy skyborne troops of straw.

Meanwhile, Lou Wagner kept up the machine-like efficiency. Bill tried to help him, toward the last. It was a mistake. A dizziness caught Bill and he sank to his knees.

Lou turned to offer a hand.

"Hell, don't stop for me," Bill growled. He shook a fist at the door, a gesture for the enemy. Lou took the hint and went on heaving dummies.

The awful feeling in Bill's chest was growing tighter, but it was not the same feeling he had had when he thought, yesterday, that he was dying. That had been a weakening, fading, far-awayness, like the slow oozing of air out of a balloon. This was different—a heaviness —an exaggerated sensitivity to every thread of pain.

He put a bottle to his lips. He drained the last of its fiery red liquor and tossed it out the open side of the plane. He lay down on his side, resting his parachute pack against the floor, and closed his eyes.

Then he felt the plane banking and he roused up.

"On east, March. You know the original plan."

Captain Marchand scowled back at him. "We're not going to let a sick man parachute down."

"Sick or dead, I'm going on according to plan." Bill fished in his pocket for his order from the supreme command. "This is still valid."

Marchand shrugged and accepted the suggestion. He swung the plane on to the east. He grumbled, "We'll respect that order, but Lou or I will do the dirty work, not you."

"There'll be no argument about that, either." Bill held a pistol. "I've got orders to deliver my goods in person . . ."

HE PARACHUTED down where a peasant was plowing a long furrow, apparently oblivious to the invasion furor all around him. The furrow pointed south across the field toward a brown thicket with a barely perceptible outcropping of brown rocks. This was right. The peasant went on plowing, and that was right, too. Bill climbed out of his harness and stumbled along on heavy feet. The thicket swallowed him up . . .

High overhead, Lou Wagner stared down as long as he could see that field. "Great guy, Bill," Lou said. "Kinda noisy, but he's got plenty of guts."

"Great guy," March echoed. "Superstitious as a fox, but I'm damned if his superstition didn't get him back on his feet. Or something did. What the devil was that thing pumping him back to life?"

"I'll ask Helene about it. Whatever it was, it was turning him gray. Did you notice his chest?"

"What about it?"

"It looked like a chunk of concrete . . ."

THREE or four times, through the long dark tunnel, Bill stopped to tap a small stone against his chest. Then he tapped it against the stone wall to compare the sounds. The heaviness that gathered was more than tired muscles and constitutional fatigue.

But the heaviness, so much like stone, was by no means a numbness. It was full of intricate feelings, as if the tissues of his heart and lungs and pectoral muscles were turning into a filigree of steel nerves and leaden cells.

When he stopped for a moment of rest, he could hear the slow, rhythmic ticking of the big artificial heart locked upon his chest.

The dark tunnel opened on a river; above him was the viaduct that he had expected. The bright afternoon light stung his eyes. Far away the thunder of big guns sounded. Between the waves of explosions he could hear the sharp click of Nazi boots on the steel viaduct overhead.

He meant to cross that river by the passage known to the Underground. Five hundred paces downstream there would be a junk heap—but five hundred paces were no longer an accurate measure to Bill Bradford. His feet were gathering weight. His steps were short.

He held to the shadows of the sloping bank. Once he looked back to the viaduct. The German guards hadn't seen him. Their eyes were on the lookout for plane attacks.

Five hundred paces downstream Bill crept toward a heap of broken stones and rotten wood that had once been a fisherman's dwelling. Something moved amid the ruins. Bill began to sing, in his dusty throat, some old folk song. The movement became a beckoning arm. Bill moved into the passageway on hands and knees. He must hurry. A squadron of allied planes was approaching, taking in numerous targets along the river.

The Frenchman who guarded the conduit through the river could not speak English, but he appeared immensely satisfied with Bill's papers. He showed a

glow of appreciation at the gift of a chocolate bar. But when Bill offered him a good luck charm, he couldn't understand, and refused.

Bill crawled down into the curved, corrugated metal pipe that ran under the water. It was a strange way to cross a river. The long metal tube was too narrow for his long body to proceed on hands and knees. He crawled with difficulty. Solid blackness. Metallic echoes flowing from one end of the conduit to the other. The echoes of his own stony hands slipping over the corrugations. Echoes—and suddenly an ear-splitting bolt of thunder!

B l a m m m m m! Balooombahhrr! Thrummb-thrummb-crasssh!

The explosion seemed only a matter of yards away. The corrugated metal passage bounced with the impact. It ripped, at some point back of Bill. The black waters poured in like a flood. He was caught.

HE WAS caught halfway across the river, many feet under its surface, and now his metal tunnel had snapped like macaroni under the impact of a bombing explosion. That's what had happened. He knew it instantly. Allied bombs were dropping over the viaduct a few rods upstream.

Two more bombs! And from the uproar that beat against the conduit, the whole viaduct might have been rolling down upon him. The end of a mission, he thought. Water struck him from both ends of his metal trap. Caught like a rat. If only he could have *delivered* before this happened!

He held his breath. He clawed at the corrugated metal. The slime and black water went through his clothing, swept over his arms, filled in around his ticking metal heart. He reared his head high against the top of the pipe. The water filled his ears, splashed onto his cheeks, swept into his nostrils.

He was completely compressed, with no chance to breathe. Breathing was a thing of the past. These were last seconds to be filled with that last dizzying whirl of thoughts—

Yes, the allied bombers had done well by that viaduct. And all the ugly enemy on it, and countless hundreds or thousands more who might have used it as an escape to Cherbourg would be a part of this triumph. Bill's life was a small price to pay, he realized. If only he could have delivered!

A last choking moment of life, it seemed. The thumping of debris against the pipe struck with new thunder. Bill had a premonition that life might be crushed out of him by stone and steel from the bombed viaduct before this long moment of drowning snuffed him out.

Then, suddenly, he was being *lifted*.

A ripping of metal and a slushing of the black flood around him accompanied his lift. The section of pipe that held him was being hurled upward . . . Air!

He breathed with a gratefulness that was like a prayer. Above him was a circle of blue sky. For the moment the torn conduit had been upended by the jostle of debris that had pounded it and bounced it out of position.

BILL clung for dear life. Then he climbed. Within a few seconds he reached the top of the jagged metal opening. He looked out. The pipe that held him stuck up like an immense mud-washed smokestack, hanging at a steep angle above the boiling river. Upstream —no viaduct! Only ruins, twisted and matted and thrown in all directions.

A few of the Germans had escaped with their lives, and Bill could hear them shouting back and forth as they tried to recover their own wounded.

Bill dropped off the jagged end of the pipe. He fell only a few feet to the water. The shore he wanted was hardly twenty yards away—a hard enough fight for his painful, throbbing body, but he knew he could make it.

He dragged himself up the bank like a mud-soaked turtle in a shell of lead.

Freedom from death! He breathed the sweet thought. Another chance to do—

The enemy boots pounded over the bank. The enemy pistols blazed fire. The first bullet sank deep into Bill's head. He fell forward. And as he fell, his body gathered other bullets.

CHAPTER IV

Living Dust

HAD any man ever endured such sensations before?

Bill's eyes were closed. One side of his brain was numbed. The torn flesh of his body cried out for mercy. And yet he was poignantly aware that those bullets had not brought on the normal death.

The feelings of changing to a stony, steely material came over him anew. Through parts of his body the sensations were so vivid it was as if he could *see* the thousands of separate strands of human tissue—soft little silky threads being transformed into a network of taut piano wires; bundles of muscle cells filling out into hard slices of stone. There was no bleeding from his wounds. Any blood his tortured body might contain was a different blood that worked like living concrete.

Another strange awareness came to him, as he lay on the river bank beneath the darkening sky. The dust and smoke of fighting that drifted slowly through the air acted with something like a magnetic attraction for him. It oozed along in misty streams and gathered over his damp paratrooper boots.

He rose slowly to his feet. The two miles between him and his destination seemed a long distance to such heavy stone feet.

Through the darkness he walked.

He shamed himself for being so slow. He was distressed that his attention should be so fully absorbed by the strange labyrinth of tortured, ossifying nerves. In these, the most dramatic hours of all history, for all people—and these wonderful, terrible sensations from his own body continued to dominate his thoughts. How long could they go on without carrying him over the final brink of death?

Late in the night he reached the appointed spot. The two miles of moving as living stone must move—it could hardly be called walking—had been fought through to success. His left arm bumped against the cellar door—stone against rotting wood. He stood there motionless, the pistol in his right hand.

Three members of the underground questioned him by turns, and when they were convinced that he was the man they expected, one of them ran through the night to overtake the one comrade who should receive the message. For the key man in this set up had started on his way a few minutes earlier, convinced that the message from England would not come through.

Bill's voice was strange to himself. His jaws were almost paralyzed. He forced the words like separate slabs of marble being laid out, one weight at a time.

"If . . . you . . . are . . . the . . . one, . . . you . . . know . . . where . . . the . . . message . . . is."

THE Frenchman did know. He reached to Bill's pistol, he un-

screwed a plate from the handle, removed the papers. By candlelight he scanned the contents eagerly and pocketed them. He called a few hasty orders to the other members of this underground group. Then, with a touch of courtesy, he replaced the plate on the pistol handle and returned the weapon to Bill's hand.

With hardening fingers Bill tightened his grasp on the pistol. Yet there was still enough flexibility from wrists to fingertips that he gave a slight gesture of farewell as the underground party hurried away.

Back of him the candle still burned as he fought his way slowly up the stone steps.

He saw now, for the first time, what ungainly things his shoe soles had become. Wide oval slabs of mud and stone and dust had grown fast to his feet. As if his boots were mounted on pedestals. The boots, too, were gray and stony. His very clothing was turning to stone. Somehow this did not surprise him, now. For in these weird hours of metamorphosis he had felt a reaching out of his new nerves to everything they could touch, bringing everything in as a part of him.

His artificial heart was still ticking. It no longer protruded, something apart from him. It had moved inward to become an integral part of him. He was a creature of that heart.

It was still ticking when he came to a dead stop in the center of a deserted village.

Pink dawn rose above the war clouds. Great battles would come again today. And he would stand here, unable to move any farther.

Standing motionless, he gave way to a sort of sleep. His pain was beginning to fade. This sensation of stupor was most welcome.

He awoke abruptly. German troops were hurrying through this village. Allied bombers were swinging over. Buildings were crashing around him. Some big guns must have picked this target.

He tried to turn his head. No, that was no longer possible. But his eyes would turn, and he could see what was happening to him.

A stone structure was forming around him — a sort of doorway that arched over his head and down past his shoulders.

Whenever a building's stone walls fell in ruins, the dust swirled toward him and swept around in fanciful lines. It caught upon the stones of himself and his ornamental arch. It settled. It stuck. And so the arch grew.

Sometimes the Huns, hurrying past, caught sight of him standing there. A few of them squandered bullets on him. But that made no difference now. In fact, the bullets no longer penetrated his flesh. They simply flattened against his stone.

Miraculously, the big shells and falling bombs missed him. Sometimes he thought they swerved out of their courses to miss him. And so the morning's heavy action wore on. The village buildings fell into ruins. The ornamental living stone about him grew. And he saw what was gradually coming over him.

The death he had cheated two days before was closing in on him at last. A final numbness was slowly spreading . . . Slowly . . .

CHAPTER V

Ill-Fated Rescue Party

LATE that afternoon, high above the ruins of the viaduct, two American soldiers and an English girl baled out of a crippled plane in time to parachute down to safety.

Captain Marchand was gloomy. He would never admit to any superstitions on his own part, but he had entertained an unholy fear, from the start, that this rescue venture would be ill-fated. The smoke of invasion was too high to risk a flight this far inland, even when the man to be rescued was Lieutenant Bill Bradford.

But Helene Danzelle had promoted the plan so ardently that she had won official approval. The truth was that she had a pull. Her curious old uncles were among the most valued scientists in the allied cause.

However, the task was a hopeless one, now that the plane was gone. Lou Wagner had come down out of the sky a casualty. While Helene administered first aid to his torn side, they and Captain Marchand held their council of war. This was enemy-held land. Troops were moving through this valley. There was little hope that Bill Bradford, if living, would show his face in daylight.

"All right, I was all wrong," Helene Danzelle admitted regretfully. "I shouldn't have started this rescue. But Lou and I wanted so much to do something for Bill. And if there was any chance that that artificial heart would prove itself as a life-giving invention—"

"I'm afraid it didn't," said Lou. "Bill himself seemed convinced that it would only keep him going for a few hours."

"What are we to do then?"

"Save our own skins," said Captain Marchand. "Without our plane that's the only thing to do."

They slipped along from cover to cover until they reached the ruined village. This, according to their information, would have been Bill Bradford's point of contact with the Underground. But there was no Underground left. There was scarcely any village.

"No time for sight-seeing, Lou," Marchand snapped. Then he stared. "What kind of thing is that? It looks like a statue of a paratrooper, built into a little cathedral."

"It looks like *Bill!*" Lou exclaimed.

They edged along the street cautiously. Lou, with a wounded side, was trying to keep pace without holding the party back. Now they paused and took cover in the ruins of a building. Enemy motorcycles were coming over the hill a half mile away.

"Bill!" Lou shouted. *"Bill Bradford. Is that you?"*

"Shut up!" Captain Marchand growled. "Get under this."

He dragged a wide flap of floor matting into the corner, and helped Helene and Lou under it. By raising it to the level of the battered stone window frame they could peek out at the approaching motorcycle corps, without being seen.

THE Germans roared through. A few of them turned their heads with curiosity at the sight of a stone structure in the center of the street. It had the ornamental qualities of a cathedral, though it stood only twenty-five or thirty feet high. Its graceful lines all curved in such a way as to point up the one central figure—the finely shaped American paratrooper standing erect, holding a black pistol in his right hand.

Obviously this was the only structure in the village that hadn't been damaged by bombs and shells.

This fact must have annoyed one of the last men in the motorcycle parade. He stopped and stared back at the beautiful stonework. The sneer on his face told Lou Wagner that the elegance of the monument struck him as an insult. He drew his pistol and fired three shots.

The shots had no effect on the stone

paratrooper. Only the tiniest wisps of dust sprayed from the chest of the stone figure. The Nazi sped on to catch up with his party.

Again Lou and his two companions stared. How **could** any French sculptor have dared to erect such a statue?

"But *is* it a paratrooper?" Marchand said. "Let's take a look."

They ventured out into the open as far as they dared.

"By God, it's Bill," Lou said, "—the very image of him!"

"It's the first monument to the invasion," Helene said slowly. "I'm glad it looks so much like someone we know. Look how carefully the clothing has been carved. And that black marble gun—"

"How do you explain it, Helene?" Marchand asked.

"I can't."

"If Bill Bradford were here he'd ask you. He gave you credit for seeing through every mystery that came up."

"He overrated me," said Helene. "But my uncles—they might figure it out. When the war is over I know they'll want to see it. I hope—*look! The eyes!*"

"What happened?"

"I thought they moved," Helene gasped.

"They *did* move. I saw them," Lou declared. "Bill! Bill—it *is* you, isn't it! Bill, speak to us!"

From its gray stone shoes to the gray stone of its shirt, the gray face and eyes and eyelashes, it stood as motionless as any tombstone.

"You both better come away," Marchand said. "You're seeing things. The resemblance is going to your head. It's easy to have hallucinations when you're emotionally upset. Come on away."

Marchand drove his point home by picking up a small stone and tapping the figure up and down. The clack of rock against rock was the only response he got. He watched the eyes intently for a moment. They were stone eyes, staring straight ahead.

"All right," said Lou. "It just got the best of me for a moment." He saw that Helene was weeping.

They scurried for cover again—too late! Five of the soldiers had suddenly walked out of the ruins from the outer edge of the village. Lou reached for his pistol.

Crack! The weapon was shot out of his hands. Five men came on with rifles ready. Marchand started to shoot but must have thought better of it. He dropped his pistol at his feet and raised his hands. Five men came on with wise.

THE three of them, then, stood in front of a battered stone wall that might have given them protection if they had been a moment quicker. The two pistols at their feet were no more useful than stones. The Germans marched up, and their spokesman growled in bad English.

"I'll do the talking," Marchand muttered under his breath. Then he shouted, "I wouldn't shoot. If you shoot, you die!"

The big Hun's face twisted into what was meant for a laugh. "Who dies? Not us. And not the girl. She's to be my prisoner."

"Stay where you are!" Marchand snapped. "We've got guns on you from three sides."

The big Nazi snarled. "I can't stand such lies. Shoot the men. No, I'll shoot them myself."

The big man lifted his rifle. Instantly it dropped from his hands. Gunfire from somewhere in the neighborhood of the stone statue caught him

in the side of the head. It brought him down like a straw dummy.

Three other soldiers let go their guns and hoisted their hands. The remaining one hesitated to look for the source of the pistol shot. Lou seized a fallen weapon and took care of him. He thumped down beside his leader.

In a flash Captain Marchand took command, and the three living prisoners stood ready to do any Allied soldier's bidding.

"You'll be useful in helping us get back," said Marchand. "We'll start as soon as it's dark. We'll have a fighting chance to make it. Meanwhile—by God, where *did* that shot come from?"

"From the statue," said Lou. "I'm going back and talk with it . . . You never know how much stone ears may hear."

"I'll go with you," Helene said. "I want to leave a wreath of wild-flowers to—to the men of the invasion."

THE END

JUST PLAIN WIZARDRY

By ARNOLD YOUNG

"WE'VE got him dead to rights," Captain Erickson shouted jubilantly over the intercommunication system to his navigator. "Fifty miles from our target and it is as clear as a bell. Stormy must have pulled a boner this time."

Gerhardt at the bomb sight chuckled. "Don't be too quick, Skipper. We're still not within sight of our target. Don't count Stormy out until you can pin him down. Remember the raid on—"

"Never mind that!" barked the Skipper good-naturedly. "That was just a lucky shot. This time the shoe is on the other foot. No man alive can forecast three days in advance one cloud that will exactly cover our bombing target. All the adiabater charts and tephigians in the world can't show the development of clouds that accurately. No, sir! He's a dead duck on this forecast and he'll stew in his own juice when we get back."

Captain Erickson smiled. His mind went back to that cramped, two by four weather station that sat next to the Operations Building. It was kind of pilot's "hangout" where they would sit for hours and exchange details about the last mission, the new Boche fighter tactics, the weather. Weather, of course, was their pet subject. On a mission it could be their most vital aid or their deadliest enemy, and all of them were quick to admit their dependence on it for protection. These weren't cocky kids but old timers that knew that each detail on a mission was vital if they were to hit their targets and return in a recognizable condition.

Besides, when they talked about the weather they could always rib Stormy.

"How about a forecast for three weeks from next Thursday, Stormy? I've got a date with a munitions dump."

"What time three weeks from next Thursday?" would be Stormy's quick reply, and the boys would burst into laughter.

"I understand the C. O. gave you ——— for that forecast for the Naples raid." This was Captain Pannor, veteran of thirty-five missions, talking. "What do you mean calling for altocumulus clouds at 12,000 feet that don't show up until 11,500. We've got to have greater accuracy, Stormy. There's a war to win, you know."

"His altimeter setting must have been off," replied Stormy, his Irish brogue showing itself, "besides, Johnny plotted a point on the adiabat two millibars too high. It threw me off—but I still say the C. O.'s altimeter was wrong." Again the boys laughed. You could always count on a sharp comeback from Stormy.

This good-natured ribbing was their feature activity all the time. The pilots did it just to provoke Stormy into replying because actually these men had the highest respect for his masterful knowledge of meterology, his crystal clear analyses, and his almost wizard like ability to weigh and balance all the elements that enter into forecasting and call his shots for specific missions. His reputation had spread throughout the 12th Air Force. "Stormy called it again" became a well-worn expression.

His legal name was James Patrick Sullivan; believe it or not. As a red-headed Irish kid, he had fought all the fights that kids get into on the streets of Boston. As a result, he entered young manhood with a chipped jaw and the moniker Stormy.

In high school he calmed down considerably devoting most of his efforts to the strange new worlds of science that were opening up before him. The name, of course, still stuck, but the explosions only came now when he was stumped by the problems of physics or disturbed by a tricky equation in trigonometry.

His growing interest and inquisitiveness in the

fields of sceince prevailed when he began his college career. His courses were stuffed with analytic geometry, calculus, x-ray physics, etc., but in his last year he was forced to drop out for financial reasons.

He worked at various jobs after he left school, a chemical plant, a gauge engineering factory, any place that could satisfy his desire to apply some of the things he had absorbed in his abbreviated college career.

Not long after Pearl Harbor he enlisted in the army. At the classification center the officer in charge decided Stormy's scientific background could be best applied in weather in the Air Force. Stormy was assigned to the Weather Observor School.

No better choice could have been made. In quick succession he graduated top man from observor school, was sent to a station for experience, and after he had passed the stiff qualifying exam, returned to school to study weather forecasting. Here again his work was exceptional and after graduation he was sent to an important air base in the United States.

But the war was moving fast then. We had already landed in North Africa and were proceeding to put the squeeze on Rommel and his African Corps. The work of the 12th Air Force was growing more important daily as they pounded the supply routes, the communication center, and the troop concentrations of the Desert Fox. The need for fast, accurate reconnaisance, and hard, devastating bombing attacks was vital if the Allies were to rid the North African shores of the Nazis quickly to get to the work of invading Europe. Among the men called to provide the vital weather forecasts was Stormy.

HE CAME prepared. Forecasting is a science and an art. It depends on a sound background of knowledge of meterology, climatology, physics, mathematics. It requires a mind that can project the principles of these sciences to the vast spaces, and the movement of air masses. It needs imagination. It requires a mind that can weigh and balance all the varying elements of pressure, temperature, humidity, geographical influence, and arrive at a simple, clear conclusion. Finally, it requires the guts to make a conclusion and stick by it when the fate of hundreds of men and millions of dollars in airplanes depends on the forecast.

For when a raid is planned, a weather forecaster must provide the information vital to the mission's success. He must tell the pilot what clouds he will find on the way and over his target so that he will know how high to fly to remain concealed, and at what altitude bombing will be most successful. He must be able to tell the pilot what kind of clouds to expect and whether there will be icing conditions present. The pilot must know how fast the wind will be and from what direction so that he can choose a proper flying altitude. He must know whether to expect any rain, snow, or weather elements that will interfere with his flight, or that he can possibly use to cover his return to his base. He must know if there will be any restriction to his horizontal visibility such as fog; a ground fog or haze would necessitate a change of base on return. He will want to know if there will be turbulence or thunderstorms that can wreck his ship. All this information must be provided and must be accurate—*or else!*

Stormy, as a weather forecaster for the 12th Air Force, had accepted the responsibility of supplying this information and more. He was not satisfied in using his knowledge to supply just this passive information, but made weather an active arm of the 12th Air Force, a sledge hammer aid which could beat down the enemy. Take the raid on an unidentified airdome in the toe of the Italian boot. It was one of the intensely active bases from which the Germans were sending large fighter groups to harass the first invaders of Italy. It was a well-defended base, one which obviously required a concentrated surprise attack to eliminate it. Stormy provided the surprise.

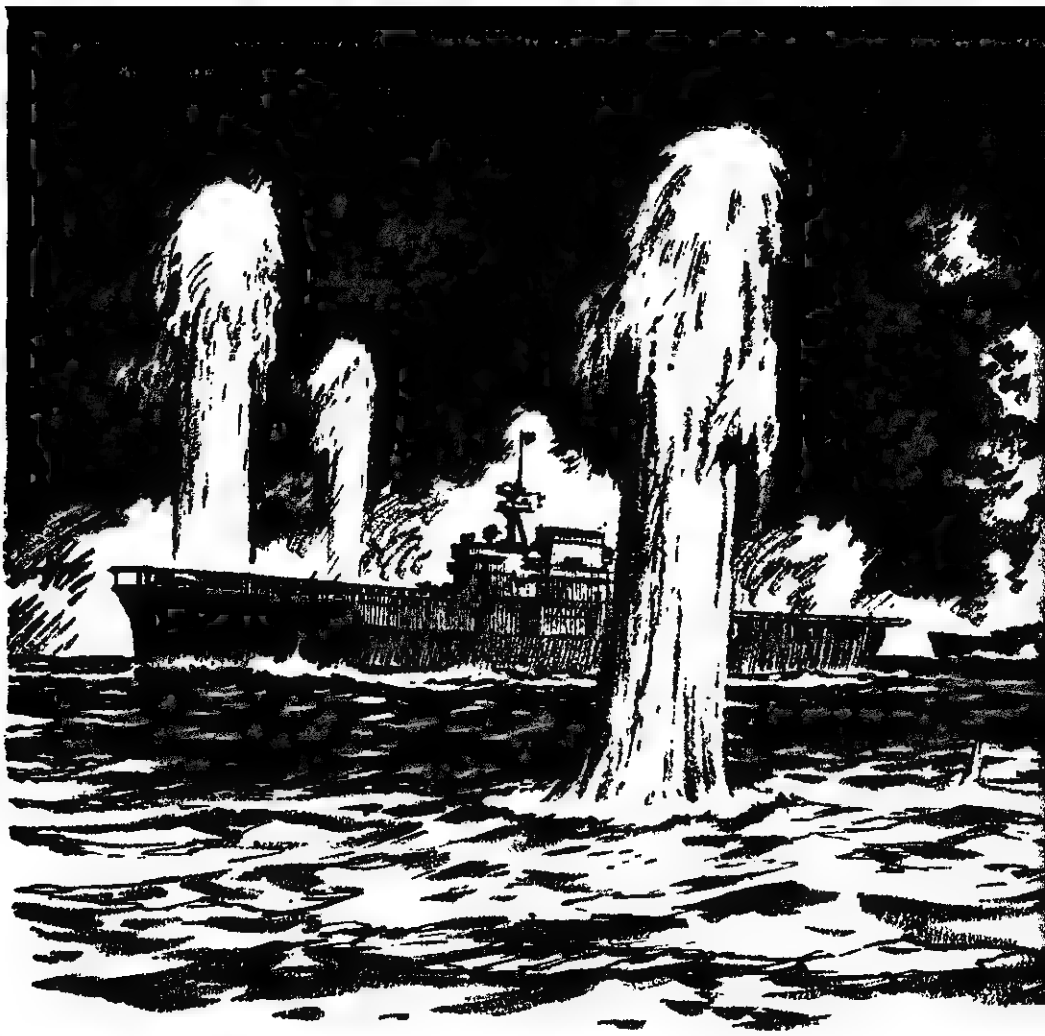
From his synoptic map Stormy had noted a fast moving front coming across the Mediterranean. It was accompanied by rain, intense turbulence and strong thunderstorm activity; a rough calculation of its speed showed that it would strike the Italian mainland in the early evening. Stormy's eyes lit up as he saw the opportunity for a blow at the Nazi forces that would rock their heels. This is the plan that he presented to his commanding officer.

The Germans were as aware of the movement of that particular front as the Allies. Being "super-intellectuals" they were certainly not going to keep their planes in the air with the obvious probability of their destruction by the activity within the front. They would therefore bring all the planes back to their bases to roost on the ground until the front had passed, and clear weather took place behind it.

This was the moment, Stormy argued, that the Allies should strike. A raid delivered at the precise moment when the Nazis had grounded their planes would catch them like "sitting ducks." A large enough force would be able to eradicate the entire base.

The key to the entire operation, of course, was timing. If the movement of the front was judged incorrectly and the raid were delivered an hour too early, it would find the Nazi planes aloft prepared for battle. Delay caused by this oppositioin might catch the Allied Force in the front and in dire peril. The Germans were immediately above their home base. They could disengage and land. Being caught far from their base in the midst of a storm would mean complete disaster for the Allies. The forecast *had* to be accurate; the C.O. knew it when he looked Stormy in the eye.

(Continued on page 130)



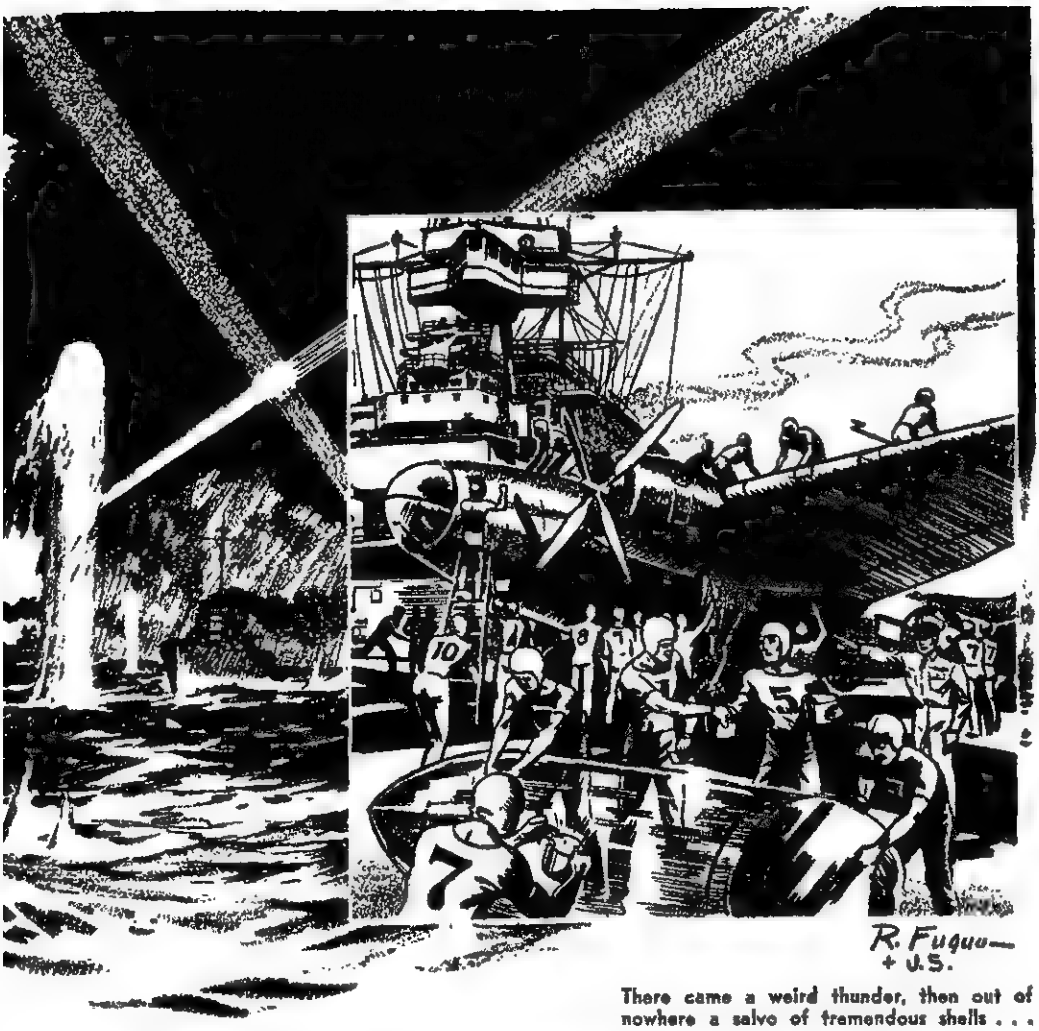
THE ODYSSEY OF

By STANTON A. COBLENTZ

HE WAS a swaying rail of a man in a naval uniform, and his long lean face seemed to be made up entirely of the hatchet beak of a nose and the popping black-beetle eyes that leapt and snapped with a living fire.

I first heard of him while making my waterfront rounds as a reporter for the *Mercury-Tribune*. "Why not see battling Bert?" some one asked me. "His hangout is the Blue Casino, whenever he has time off. They say he has yarns to tell that would turn old Sinbad green with envy. And swears by God and the Bible they're gospel truth."

I had often heard of such yarn-spin-



There came a weird thunder, then out of nowhere a salvo of tremendous shells . . .

BATTLING BERT

GIANT shells only a battleship could fire—yet there was no ship

ning prodigies, and was not greatly impressed; but when I actually met Bert, and felt the mesmeric earnestness in his manner, I knew that I had not been misdirected. Learning that I was with the *Mercury-Tribune,* he seemed to consider me his especial game; and I had no trouble about luring him into a booth, where, between sips of gin, he opened up upon me with both barrels.

"Ever hear of that battle at Guadalcanal where we lost four cruisers—three American, and one Australian?" he asked. "Worst licking we ever took from the Japs! Want to hear the real story of how we turned the tables on

them damned Mikado-worshippers? I lived through it all from the first shot, and, believe me, old pal, I know things the Navy Department won't let out, for military reasons—not until long after the whole blasted scrap is over!"

Now it was not my intention to pry into the secrets of the Navy Department; but Bert, I knew, had been telling his story to others, and I didn't see why I should not come in for my share.

"Not that it would do any harm to let the truth out," he went on, bending confidentially across the table, until his beaked nose almost touched me. "It's only that nobody would believe it—wouldn't blame them, neither! I wouldn't believe it myself, if I hadn't lived through the whole crazy mess."

"Well, what's it all about?" I demanded.

He fortified himself with another mouthful of gin before he began, in a half whisper, as if fearful of being overheard:

"I was on the carrier *Lancet,* in the thick of the fight from the first. Remember how the story got out that we Yanks was caught napping? Well, never believe it—that yarn was just a smoke-screen. What really happened was that the Japs had a new secret weapon."

"New secret weapon?"

"Yes, and the damnest thing you ever laid eyes on. The hell of it was you couldn't see the cussed thing."

"You mean—it was invisible?"

"Hold your horses there, pal! I'm getting to that. It was a fine moonlight night, and good visibility—we was steaming along at ten knots, and not an enemy in sight. Them four cruisers and two or three more, also some destroyers, made a fine sight as they cruised in a long even line toward some secret objective—"

"What objective?"

"How in blazes do I know? I'm only a common seaman, pal, and the Admiral must of forgot to let me in on the dope!"

Casting me a contemptuous glance, Bert paused briefly, brought his glass once more to his lips, and continued.

"ANYWAY, there we was sailing, and not a sign of the enemy. Suddenly, plum out of the blue—that is, out of moonlight—there comes a sound like thunder, only worse. It gets nearer, with the most devilish zooming and booming you ever heard, but you don't see a damned thing. The zooming and booming gives way to a droning and whining; then suddenly, right in our wake, there comes the most terrific splash. Waterspout must of been half a mile high, so help me God! It tossed our carrier round worse 'n a feather. Lucky it missed us a few hundred yards, or I wouldn't be here today."

"What in damnation was it?"

"You're asking me, pal? Say, don't you think that was just what all the gobs was asking—them as wasn't hurt too bad! Look here, will you? Right behind my neck!"

He smoothed away the hair at the back of his neck, permitting me to see a long jagged scar.

"That's where a piece of shrapnel from the blast hit me. A little harder, and it'd taken my head right off!"

"And where did you say it came from?"

"I didn't say. Hell, that's what had us all guessing. While we was standing round sort of stunned, what did we hear again but that zooming, booming noise? Well, this time we sure flattened ourselves out fast against the deck! No sooner was we down on our bellies than we heard a noise making us think the whole Pacific Ocean had gone up in one big flame. The sky was lighted with a

blaze brighter'n the sun at noon. Know what was behind it?"

"Well—I can guess."

"Don't need to guess. It was one of the cruisers—shot must of hit her boiler room—she went up in the cussedest sheet of fire you ever saw. Not enough of her left to send home to the Missus for a souvenir."

"Lord in heaven!"

"That wasn't the worst of it, neither. That devilish noise like thunder kept on, getting louder and louder, with another droning and whining, and there came another waterspout, and we was almost hit again. It wasn't another five minutes before the second cruiser went up in fire."

"But, my God, man, didn't you try to fight back?"

"Sure we did!" There was a wry smile on Bert's long face, and his popping black-beetle eyes flashed with a light that was almost challenging. "Sure we did! Had a good chance, too! Same chance as a blind man aiming a gun in the dark. We fired some salvos, but what was there to fire at? Knew damned well we was wasting our shots, because the only clue where the enemy's shells came from was the direction of the sound."

"Yes, but didn't you send out any scouting planes?"

"You bet we did! Sent out a squadron of six—and that was when we began to get real scared. One ship, just one lone ship, came back! Reported there wasn't a goddamn sign of anything on the waves within firing range. Just the same, shots came up like from nowhere, right out of them moonlit waves, and plucked five of the planes down from the sky. Sixth got away by a miracle—I saw the bullet-holes in its wings and fuselage."

"Lord help us, that does make it look bad!"

"DON'T you tell me! Take it from some one who knows, pal, there was a lot of brave boys on that carrier, but when they saw the third cruiser go down, and then the fourth, and waterspouts jumping up all round us no matter how we tried to get away, and we thought our turn was coming next—well, then you can't blame 'em too much if some of them got down on their knees and began to pray, and some ran round and round in a fool panic, and some looked paler'n spooks by the light from them burning cruisers. It wasn't so much that we was scared our own turn was coming. Hell, what did that matter? But if them imps of Nips had a new secret weapon that could fire on us and we couldn't fire back, they'd sink our whole navy, and there wouldn't be one infernal thing we could do to stop 'em!"

"Whew!" I conceded. "That's what I do call serious!"

"Serious?" Bert paused, struck a match to a cigarette with an almost defiant force, and went on between puffs. "Serious ain't the word. It was desperate. Looked like we was done for—like we'd lost the war, that's the way it looked. If it hadn't been for a lucky accident, and the quick wits of Ensign Holloway—"

"Who in tarnation is Ensign Holloway?"

"A man the whole American people—yes, sirree, the whole world ought to get down and honor on their knees. If it hadn't been for him, them Japs would of been knocking at our front door long ago. I saw him with my own eyes—and guess I won't never forget what he did!"

I knew that Bert was approaching the climax of his story, so I said nothing while he drained away the last of the gin, then turned back to me with an aggressive thrust of his hatchet nose.

"There comes another of them hellish noises, and this time we sort of knows in our bones we ain't going to get off so easy. Every man throws himself down flat as a pancake, but we hears a racket like the whole damned tub was being ripped to smithereens, and plop! Something hits our flight deck like a hundred-ton bomb falling amidships. No need to tell us we'd been struck by a large shell, and when she didn't go off we knew she must be either a dud or one of them delayed-action babies. Wow! Any second we might be blown further'n hail Columbia!

"Well, there sure was a rush to look for that shell and hoist her overboard. The hell of it was we couldn't see a damned thing. But some of the boys kept falling over something to starboard, just where some of them five lost planes had been. It was right then that Ensign Holloway stepped forward, and took measurements."

"You mean to say he took measurements of something he couldn't see?"

"Sure, old pal, that's just what I mean to say. Maybe he was a inch or two off, but he could feel all along the thing, and get a mighty good idea of its size. I forget how many feet long it was, and it pretty near busted its way through the thick steel deck. A 2,000-pounder. Holloway said!"

"Holy Christopher! Bet you didn't waste any time about hauling it overboard!"

"That's all you know about it, pal! There's where the Ensign came in with his smart idea. 'If it blows us clean out of the water,' he says to the old man—Admiral Dartmouth, that is—'why, then, it's only one more ship lost. But if you'll let me, sir, I'll try and find the secret of this here infernal machine.' "

" 'Go to it—and my blessings!' says the Admiral."

" 'My belief,' Holloway goes on—and I listens in, standing right behind him, and him too excited to notice—'my belief is that that there shell is covered with invisible paint. If we can scrape it off and find its secret—' "

"JUST then there comes another of them cussed boomings and zoomings, and we all fall flat to the deck again, so I didn't hear the rest. But when we got back on our feet, I was one of the boys Holloway picked to help with the nastiest job any man ever tackled. We all had knives and scrapers, and he told us to work like hell, and rub the surface off that invisible shell, which we could tell by the feel of it. It was still hot as a stove, and pretty near burned the skin off my hand, and believe me! I grumbled to myself, because if the Admiral liked being blown to perdition, that didn't mean I wanted to kick off just yet. More than once I heard a sputtering, and thought sure that delayed action fuse was working."

Bert paused long enough to light another cigarette; while I put a question that had been troubling me.

"Even if you did rub the surface off that invisible shell, how could you see what you scraped off?"

"Funny thing about it," Bert went on, between puffs, "was that the stuff wasn't quite invisible against our hands or in cartons and wooden boxes. It had a pale glow, sort of like radium; but when we put it on metal it became plumb invisible again, and hid everything behind it. We couldn't figure out just what its effect on the metal was, but we didn't have to know, because Ensign Holloway's mind worked quicker's a steel spring."

"So what did he do?"

"Plenty, pal! Plenty! When we'd scraped enough of that stuff off the bomb, he tried spreading it over a two-motored Dashaway bomber. Being all

aluminum, the plane was simply blacked out—pretty soon you wouldn't of known she was there at all. Then a couple of our pilots put off with a full bomb-load. Tell you the truth, I didn't think we'd ever see the poor guys again. But I had it all wrong. They did a wonderful job, blast me for a water-rat if they didn't!"

"But how could you know what they did, if you couldn't see them?"

"Oh, I could see enough, take it from me, pal! Not at first, maybe—we could just hear them taking to the air, putting off in the direction them zooming and booming noises was coming from. But we knew the enemy couldn't see them; and the chance of hitting them, just from listening to their motors, was about like the chance of batting a home run with a broomstick in the Big Leagues. We wasn't worried none about that, pal."

"Still, if the enemy couldn't see them, how could they see the enemy?"

"Christ's sake! what a dumb question! Wasn't then crazy black-livered Japs firing shots all the time? All we had to do was get right over the spot the shots was being fired from, which was what the other planes tried to do, but they was shot down because they could be seen. But our invisible plane, guided by little spouts of smoke that couldn't be seen more'n a few stones' throws away, could get right over the Jap battleship—"

"Battleship? How do you know she was a battleship?"

"We know it alright, from what happened when we let loose with our bombs. But say, pal!" Bert broke off abruptly, "what the hell's the matter with this here pest house? Ain't that guy never going to bring no more gin?"

I RANG for the waiter; and not until after the story teller had taken another good swallow did he relax sufficiently to continue.

"Believe me, pal, we knew she was a battleship the minute she went up in flames. She wasn't invisible any more now, when them blazes broke all the way through her. No, by God! she was just about the A Number 1 fireworks exhibit we ever laid eyes on. We saw her whole goddamn hull sticking out against the sky in a sort of wavy golden red—sure was a giant too, looked about a mile long! Cross my heart to die if she wasn't the biggest battle-wagon afloat—and then some! Course, we couldn't take no measurements—didn't have time—couldn't of been a minute before the explosions hit the powder magazine, because she just spouted up in a damned eruption of red and carrot-yellow, higher'n a mountain; and the noise, which reached us about a minute later, was enough to knock you down. When we looked again, all that was left was a big rose-colored cloud against the sky."

Bert was again concentrating on the gin, and I found it hard to ask all the questions that crowded to my mind. "Those fellows in that Dashaway bomber deserved a decoration!" I remarked. "Did they get safely back?"

My acquaintance shook his head sadly. "Yep, they got back, all right. Not exactly all right, neither, because a lucky shot from that battleship ripped away half of one of their wings, and they had to land in the water. They saved themselves on rubber rafts, but the plane went to the bottom—which was a hell of a mean deal, because it took with it the secret of that invisible paint."

"How so?" I argued. "Wasn't there still that shell left on your deck?"

"No, there wasn't. Admiral Dartmouth wasn't taking no chances. He had it put on a raft and let it drift away; afraid to drop it in the water, thinking

maybe the shock would explode it. Was damned right, too! Because it turned out not to be a dud at all, but a delayed action baby, sure enough! You ought to see it when it went off—exploded by a shell from our guns. Swear to God, I thought the whole damned sea was going up in fire!"

Having drained all the gin from his glass, Bert was staggering up from his seat.

"One question more," I flung out, trying my best to detain him. "We had lost the secret, you say, but the Japs still had it. Why haven't they used it again?"

"That's just what's got me guessing too, old pal," he muttered. "S'pose they was plumb discouraged, losing their biggest battleship that way. Must of thought we had the answer to that invisible paint—and was scared to try again. Besides, most likely it used up such a hoard of valuable materials they couldn't afford to take another risk."

Bert was visibly reeling as he started out of the booth and across the blazing lobby toward the bar. "Yes, old pal," he proclaimed, "you can just take your hat off to Ensign Holloway! Nobody won't ever know it, but he's the man what beat them damned Japs, and turned our worst licking into our biggest victory!"

"Why won't any one ever know it?"

But Bert was already beyond hearing. Reaching the bar, surrounded by a knot of seamen, he sagged down against the brass railing, and exclaimed, "Gin! Quick! Make it gin all round!" And although he had trouble about remaining on his feet, his eyes bore the exalted and far-away light of one who has looked upon miracles not given to every man to see.

THE END

JUST PLAIN WIZARDRY

(Continued from page 123)

"Hope my watch is right," said Stormy. He wasn't smiling.

Stormy went to work. Reports of past movements of the front were checked and rechecked. Winds aloft, the map of wind velocity and direction at the various levels, was consulted and showed a slight shift in the direction of movement. The shift that would occur when it struck the mainland was also plotted. It was close, desperately tedious work, but Stormy was equal to it. He put the forecast on the C.O.'s desk.

Events moved quickly now. A force of one hundred bombers was prepared. The planes were gassed up, bombs loaded, pilots briefed, and at the prescribed time the first Liberator began its long run for the take-off. One after another they took to the air and a perfect formation headed for the target. Two planes developed engine trouble and were forced to return; the rest closed in and the formation was soon out of sight.

Each pilot knew his job to the letter. They had been allotted a specific amount of time for take-off and the flight to their destination. Their bombs were to be dropped quickly and the return was to be made without the slightest delay. The plan was perfect. The job of the pilot was simply to put it into effect.

Back at the base Stormy sat and waited. This was the most arduous part of his task. He could only plan but not take part in the accomplishment of the job he prepared. He had to remain behind knowing that lives hung on the accuracy of his prediction. He had to "sweat it out."

Time crawled. They should be approaching their target now. The first bomber should be laying its eggs on the parked Nazi planes. Why does time move so slowly? These were the thoughts that raced through Stormy's mind as he checked his watch for the hundredth time.

An hour passed. They should be heading home now. If they weren't, if they had been delayed, latest reports showed that they would be confronted with the full force of the storm. Why couldn't he have been with them?

Suddenly a voice called out, "Here they come!" Stormy dashed out. He watched them land as quickly as they had taken off. Every one of the bombers were there. Stormy breathed a sigh of relief.

The pilots left their ships and mobbed the weather station.

"What a nifty forecast!" they shouted. "It was like taking candy from a baby. Their ships were parked waiting for us. The Boche even had them tied down so that the wind wouldn't blow them around. They won't have to worry about the wind any more—or the planes either, for that matter!"

"Did you look back as we headed toward home?

The thunderstorm was just moving in over their field. It was perfect timing, fellows. They won't forget this day soon."

Captain Erickson had been in that raid. It was his first meeting with Stormy and a feeling of comradeship had grown quickly between them. They ribbed each other mercilessly, of course, but underneath they had only the highest respect for one another. The Swede and the Irishman were always betting on something, anything from the winner of the pennant to the wind direction over the Mediterranean. Most of the time, of course, their conversations were about the weather.

Their latest wager concerned a certain mission for which Erickson had volunteered. Stormy had forecasted three days in advance that, despite the fact that clear bombing weather would prevail over the rest of Italy, one cloud a mile wide and at least 2000 feet thick would cover Erickson's target at an altitude of 1500 feet making it impossible to bomb. The Captain, who was no meteorological slouch himself, gave Stormy the "horse laugh," arguing that it was impossible for any man to forecast that accurately. He said that the forecast was wrong, and that he would make the flight and bomb the target. Each man had put half a month's pay to back up his side, and now Captain Erickson was gleefully gloating over his apparent victory, but——

Gerhardt's voice interrupted Captain Erickson's reverie.

"We're approaching our target, Skipper. I would suggest—Wait! Skipper, do you see what I see?" The Captain banked his ship and looked down.

"Well, I'll be——! Where did that cloud come from?" There at about 2,000 feet, neatly covering the target area, was a strato-cumulus cloud a mile wide. Captain Erickson looked up at the sky as if he were asked for an explantaion from the Lord. He smiled.

"Gerhardt, we're heading for our alternate target . . . and remind me not to bet against Stormy again. That guy must have a pipeline to God!"

LIFE? —OR VOLTAGE?

NOT long ago in the laboratory of the Cleveland Clinic an experiment was performed which created a tremendous furor in the scientific world. Dr. George V. Crile was the experimenter. He is a world famous surgeon and past President of the American College of Surgeons. His work in recent days has been concerned with probing deeper than ever before into the mystery of the living organism to try and detect that vital force which men call "life."

Dr. Crile has produced in his Cleveland laboratory near-*living cells possessing to an amazing* degree the characteristics of life-like organisms. These cells were "created" by this ingenious scientist from the tissues of freshly-killed animals. The brain cells were removed and reduced to ashes electrically. From these ashes Dr. Crile obtained certain salts and other elements. By mixing these elements with protein and various chemical compounds electrically, Dr. Crile obtained cells whose physical makeup and habits and activities were very similar to living cells. These synthetic cells consume oxygen and give off carbon dioxide. They can be observed in rapid motion; they increase in size upon feeding and even carry on the reproductive functions common to the living-cell animals.

To Dr. Crile, this has only served to reinforce a belief which he has maintained for a long time. Life is closely allied to electricity, he points out, "if, indeed, it is not electricity as man knows it!" As further proof of this argument, Dr. Crile points to the experiment which follows here.

Some very fine measurements of the one-celled animal, the Amoeba, showed that it had an electrical charge of about 1/60 of a volt. A minute piece of apparatus was devised which could be attached to the Amoeba. A flow of current was initiated, and it was found that when enough positive current was introduced to cancel the negative charge of the Amoeba death and disintegration was the inevitable result. Neither an excess nor a deficiency of electricity produce any harmful effect on the animal, but when its charge was neutralized death was the result.

Dr. Crile holds "In a large series of additional *experiments we have found that in animals and in* plants as well as in fruits there exists a potential which disappears at death. This potential is dependent on a semi-permeable film, on certain electrolytic concentrations, on water, on temperatures, on oxidation, all of which together create the organizing potential. It is the charge on the films of the cells which endows the organism with its selective adaptive property. Oxidation occurs only in the presence of an electric charge, and the charge is created by oxidation. Life is a phase of the organization created by the electric strain or potential, and death is an inert stage in which potential is lost and disintegration is inaugurated."

Immediately questions jump to our minds. Can we condition life and growth by gaining control of these electrical charges? Can the vital electricity that is stealing away from living things be insulated and retained, as electricity is held in wires? What are the chances, if any, of man gaining the power to supply new electric charges to dying cells or dying bodies to keep them alive? All these questions are as yet unanswered.—*B. R. Johnson.*

A German S.S. officer was beating him to death with a whip . . .

The Whips of Doom

By Helmar Lewis

OVERTON wanted to witness the rites of the Penitentes; and he did! But then he found that a pet theory of his was more than a theory!

"YOU'RE taking a chance with your life!" the grizzled U.S. Deputy Marshal had warned Overton.

"It wouldn't be the first time," Overton had replied.

The Marshal continued. "There's no telling what those Penitentes'll be up to next. When we found the body of the last guy they caught snooping around their ceremonials, we had a tough job of identifying him. There wasn't an inch of him that hadn't been cut to shreds by the whips!"

But such warnings meant nothing to Overton. He had been similarly advised when he had decided to continue his anthropological researches among the Pigmies in Nyassaland, in Africa. And when he had prepared to go into the green hells of the Papuan jungles to study certain of the ceremonial rites of the frizzle-topped head-hunters, he had also been warned.

"If the snakes or bugs or malaria don't get you," he had been told, "then those Papuan devils surely will!"

Yet, he *had* come out of those expeditions safely and with a vast amount of original data. He still suffered an occasional twinge of malaria. That was to be expected from his work. But,

as for the supposed savages who were going to boil him in oil or lop off his head or pepper him with poisoned blowgun darts—why, that had all been poppycock. A sensible head on his shoulders, sufficient caution to stay out of a precarious situation plus the comforting presence of a .44 automatic swinging at his hip and he was prepared for any emergency.

Overton had first heard of the Penitentes from a newspaper clipping. It had described, only in slight detail, the strange, flagellant customs of a sect of religious fanatics in the hinterlands of New Mexico. He had witnessed many such rites and had recorded them in his reports. To his students at Midwestern University, he had lectured:

"Flagellation is a peculiar phenomenon that is practiced by a great many people all over the world. I am not so sure, from my researches, that this practice of self-whipping is purely physical. And the theory I am going to expound now, I warn you, has not been backed up by laboratory experiments. But, it is my belief that there is a spiritual transformation that results from self-whipping—from any whipping, for that matter—that is exalting."

One of the students queried the use of the word "exalting."

"I mean just that," Overton had explained, "I believe that something happens to the psyche, to the soul, to the inner being—call it what you will—that transforms the one who is suffering the pangs of pain from the plane of his actual physical existence to a more rarified spiritual plane. I believe, for example, that there is what I call the brotherhood of pain."

That brought another query from a student.

"The whole world is kin," Overton continued. "There is a part—infinitesimal as it may be—of the first human being in every human being now living in the world. Every man and woman, therefore, is related physically to every other man and woman. In the same way, there is a spiritual relationship between every occupant of the world. Ethereal waves—electric, magnetic or some heretofore unknown power—are emitted by each living person which are picked up, like an ethereal radio set, by some other persons or persons. Some of these waves make for thought transference. Others for the balance of extra-sensory perceptions. While still others make it possible for those who have passed away into the spirit world to commune with those of us who still remain on earth.

"Now, because of insufficient laboratory experimentation, we rationalize these unaccountable phenomena by calling them super-natural. But who is to say that what we know is natural and what we do not know is super-natural? I believe that, in time, it will be possible to transmit, not only the thoughts of a human being, but the human being, himself, through a system of extra-sensory waves and planes that are, as yet, unknown to us. It is for that reason that I feel that in the exaltation of pain there is an extra-sensory phenomenon that is in some strange way, a means of both spiritual and physical transformation. Now I can only voice this theory. Perhaps later when I return from my researches among the Penitentes I may have something new to add, something that may make out of my theory a fact."

The fact that such vestigial remains of predatory savagery were still extant in civilized United States had intrigued Overton. So he had arranged to spend his usual two month vacation in the study of the Penitentes.

"Perhaps it's because of the danger that's involved," he confessed to a col-

league. "I'm not accustomed to being holed up teaching classes at a University. I'm a field man, not a theorist. I've got to be out in the open wilds digging up the facts and artifacts for you theorist johnnies to catalog and coordinate."

SO OVERTON packed his belongings in his car and started off for New Mexico, where the Penitentes were said to abound. His first glimpse of them he obtained as he was driving out of Los Vegas on the old Santa Fe Trail. Outlined against a mass of fleecy clouds, on Starvation Peak, he saw an immense cross. It was as he was staring at it that he made the acquaintance of Big Mike Rafferty, one of the U.S. Deputy Marshals in the district. For as he stared up at the huge cross, Overton heard a car approach and stop. Rafferty got out and went up to where Overton was standing.

"Going up there?" he asked. He flashed his Marshal's badge.

Overton nodded his head. "Yes," he said, "I'm going to do some anthropological research among the Penitentes."

The grizzled Marshal chewed a straw reflectively. "Want some good advice?" he asked, and without waiting for a response, continued, "Don't!"

"Why not?"

"Tain't healthy for white folks!"

"I just want to study their customs," Overton explained. "Surely there's nothing wrong with that."

"Okay!" the Marshal replied, "but remember that I warned you. From now on, you're on your own. Don't forget to to keep your nose clean when you get up there among the Penitente Brothers. Don't ask too many questions. And, now that the Lenten season's on, stay away from their ceremonies." With these words, he turned and went back to his car.

Overton watched his car roar off. Then he turned and looked up to the immense cross on the peak. "Poppycock!" was all he said aloud, as he stepped on the starter and continued forward up the steep grade of the road.

OVERTON rented a cabin near a small settlement of Mexicans and Indian half-breeds in Rio Arriba county. About half a mile down the dusty road, in a forsaken *arroyo*, he had discovered the presence of a *morada*, a house of worship of the Penitente Brothers in the district. It was of the old-fashioned type, built of *adobe* with no windows. From his preliminary research, Overton knew that it was the kind from which the Penitentes usually began their rites.

Occasionally, as he lay in his bunk at night, he would hear the strange, high, piping of a reed flute piercing the desert night air. This he knew to be the call to worship. But he refrained, at first, from investigating. His first job, he knew, was to become acquainted with his neighbors.

He found this to be quite difficult. They seemed to resent his presence. And when he would approach them, to converse, they would sidle off with malignant grimaces. But, gradually, a few of the men began to talk with him. Once he found one of them suffering with a broken leg and took care of him, applied a splint and soon had him well on the way to recovery; so that in about a month's time Overton was able to walk about among the *adobe* huts without attracting too much attention.

Then, slowly, he began to ask questions. These, at first, were skillfully parried. But in time, he gathered a considerable amount of information about the Penitente Brotherhood. Then, one day, Pablo Domingo, the man whose broken leg he had treated, came

to him at his cabin.

"Weel be beeg doin's tonight!" he said to Overton.

"The Penitentes?"

Pablo nodded his head. "The beeg night!" he replied. "All durin' the Lent season, the *Hermanos Penitentes,* they have be pray and work up for the beeg doin's tonight."

"Today's Good Friday!"

"That is why," Pablo explained. "Tonight, they weel make the procession to the cross and the Good Friday crucifixion!"

Overton looked down at the Mexican. "Could you arrange to have me see what goes on, Pablo?"

"Es very, very dangerous!"

"I'd like to see it!"

Pablo shrugged his shoulders. "The *Hermanos,* they weel be very angry eef they find you!"

"I'll take care of myself," Overton replied. "I've just got to see the ceremonies. When will they start?"

Pablo went to the opening in the adobe wall and peered out suspiciously. Then he returned to Overton. "When you hear the playing of the flute," he said, "come outside. I weel be there waiting for you. Then I take you where they make the ceremony." He left Overton delighted with the thought that, finally, he was going to witness the flagellation rites and the crucifixion ceremonies that few white men had ever seen.

THAT night, as he lay on his bunk, he listened attentively for the sound of the flute. All he could hear, at first, was the incessant chirrup of the myriad cicadas and other night insects with an occasional howl of a desert wolf.

Then, suddenly, he heard it. This time there seemed to be a difference in the intensity of the flute's shriek. He thought he detected almost a demonic note wailing and keening in an agonizingly weird pitch. Leaping up from his bunk, Overton walked slowly outside into the immense darkness that seemed to surround him like a pall of gloom. Overhead he saw the great, star-studded spread of heavens. But there was no moon and the countryside was bathed in an enveloping mantle of pitch-black darkness.

Overton waited for a long while. Finally, he heard footsteps approaching in the sand. Then he heard a voice call out.

"Senor Overton!" he heard.

"Yes, Pablo!"

"Follow me," Pablo whispered.

Overton was barely able to distinguish Pablo's form in the darkness. But he followed him for some distance. And, as he continued, the piping wail of the reed flute became louder and louder until, soon, it seemed to be coming from only a very short distance away.

"Stop here!" Overton heard Pablo whisper.

Overton stopped short. Pablo came back to where he was standing. "Soon," Pablo said, "the procession eet weel pass here. Then you weel see all!"

Overton seated himself behind a clump of cactus with Pablo at his side. He was tempted to question his guide about the ceremonies, but he decided to bide his time. First, he must see the rites for himself. Later on, he could supplement the gaps with Pablo's information.

Pablo indicated with his right hand. "That way," he said, "eez where the cross weel be. Soon, the procession, eet weel pass by here." He listened for a moment. "Eet comes now!" he said. "Please to be quiet! We must not be deescover!"

Overton listened. As if from an extreme distance he heard the sound of

a chant growing louder and louder. Then, through the darkness, he saw the pin-points of candle-flames as though they were being held in a long procession. Gradually the lights grew larger, the chant louder, and the thin, piping wail of the reed flute over-rode all the sounds.

From over a rise in the ground, Overton saw a Mexican appear with a flute in his hands and mouth. Behind him Overton saw the first flush of dawn break into the dark sky. Then, as though it were emerging from the rise in ground, came a huge wooden cross born on the shoulders of a native wearing only a pair of white cotton trousers. Overton saw him lurch and stumble under the enormous weight he carried. Behind this large cross, a number of other smaller crosses appeared, each being dragged and carried by a Penitente. And behind this procession of crosses and their bearers came a procession of Penitentes, their gleaming torsos bared to the skin and shining in the flickering light from a hundred candles being carried high by others in the procession. These Penitentes carried whips made of Spanish bayonet fibers tipped with cholla cactus spines tied together on a wooden handle. And, as they wailed in their chant, each flagellant Penitente swung the wicked whip, first across his left shoulder and then across his right shoulder as the blood streamed down their front and back along troughed gashes in their flesh.

SLOWLY the procession continued to file past the awed Overton as he crouched behind the cactus. Finally, when the last of the procession had passed him, Overton felt the pluck of Pablo's fingers at his sleeve.

"Come, Senor Overton," Pablo whispered, "eet eez done!"

"How about the crucifixion ceremony? I want to witness that."

Pablo grew frightened. "No, senor!" he insisted. His voice tremored with fright. "Not that! Eef they catch us, we weel be keeled!"

But Overton was impatient. "Don't worry!" he said, "they won't catch us!"

But, before he was able to stop him, Pablo had run off, the faint clop-clop of his sandals in the sand soon dying out in the night. Overton was tempted to follow Pablo. But when he heard the dying fall of the procession chant, he made up his mind to continue with his investigation. After all, he reasoned, the most important part of the ceremonies would be conducted at the cross.

His mind made up, Overton began to follow in the footsteps of the Penitente procession making certain that he was far enough behind to avoid detection. He stopped short when he saw the procession wind up at the immense cross he had seen when he had first been accosted by the U.S. Marshal. Around the large cross, he saw fourteen smaller ones about which the procession had formed a large circle. And, as many of the Penitentes kneeled in prayer, the whipping fanatics belabored themselves with their cactus knouts the while they rent the air with their groans and cries of pain.

Standing off to one side, Overton saw a small figure of a man—the one who had borne the enormous cross in the procession. He had been chosen in the drawing of lots to be the one who was to be crucified. Overton saw a number of the others approach the man with leather thongs, as though they were preparing to lash him to the cross he had carried. Just as they were about to do so, Overton felt someone leap upon his back.

"A spy!" he heard someone behind him cry out.

Soon, others of the Penitentes had

leaped upon him. And, before he was aware of what was happening, he felt a heavy blow land on his head and a blinding flash seared across his eyes. Then darkness brought with it unconsciousness.

HE CAME out of his faint to feel the lash of the whip cutting across his bruised flesh. Time and again, the cactus-tipped thongs of Spanish bayonet came down on his back, across his shoulders and on his arms. And as the pain acid-etched itself across his brain, he could think only of one thing: *they are going to crucify me! they are going to crucify me!*

But, soon, although the biting lashes continued, it appeared to him that the pangs of pain were decreasing. He heard the wail of the chanters, the litany of the dead singing in his ears.

Then a strange thing happened to him.

In some unaccountable way, although his body was still writhing in agony, his mind, somehow, had separated itself from its corporeal shell and was soaring up and away into the limitless stretches of infinity, up and away . . . away . . .

"Is this death?" he thought. "Have I died and is my soul winging its way to some unknown bourne?"

And then an odd thought struck him. He was performing an experiment in pain, such as he had told his students of in school. Through the medium of pain, he had become exalted. He had emerged into another plane of existence. What plane? What miracle was going to be wrought because he had joined the brotherhood of pain?

"SCHWEINHUNDT!" was the first word he heard again.

He opened his eyes wearily and saw, towering above him, the burly uniformed hulk of a Gestapo man, his bullwhip raised high over his head.

"So!" the Gestapo man roared, "will you talk now, you American pig?"

Overton could only gasp in pain. But he refused to cry out. And his obstinacy enraged the Gestapo man so much that he continued to rain blows with his whip onto the bared back of the man beneath him in the dirt.

"Talk!" he screamed out, "talk, or I will cut you to ribbons!"

But Overton continued silent. To take his mind away from the pain, he tried to think through his present predicament. Why was he being beaten now in Germany? How had he gotten to Germany? His last conscious thought had come in New Mexico, in the United States. Yet, here he was being whipped in Germany by a brutalized Gestapo man.

It all had something to do with the brotherhood of pain, he was certain of that. Perhaps some other poor victim had been whipped at exactly the same moment that he was being whipped by the Penitentes. And in some peculiar manner, because both were on the verge of death, perhaps, their astral bodies hovering on the brink of the long journey to nowhere, their bodies had been transposed — their bodies and their psyches. Was this the proof of the theory he had given to his students?

But he was suffering too much to continue with his thoughts. He was rudely wrenched back to the pain of his whipping when he felt himself being drenched with cold water.

"Take him back to his cell!" he heard the Gestapo man say. And then the whipping ceased and he felt himself being dragged along the ground.

When Overton regained consciousness, he discovered, to his consternation, that he was in a dank, stone-lined cell the walls of which continually dripped green slime. When he tried to move

severe spasms of pain shot through his body. It was then he remembered the whipping he had received. But something bothered him. Why had he heard the word "schweinhundt?" What did that have to do with the Penitentes in New Mexico?

He lay on his back for a while, luxuriating in the softness of some damp straw that was under his aching back. Then, as though it were coming from vast distances, he heard an insistent rat-tat-tat coming from behind the walls of his cell. At first, he chose to make nothing of it attributing the sound to rats. But, gradually, he began to hear the rapping take on a definite pattern. And the fact suddenly dawned on him that it was being sent in a sort of a code.

He dragged himself closer to the wall to hear the message better. Then, from out of the mists of the past, there came back to him the elements of the Morse Code that he had learned when he was a lad in the Boy Scouts, in Titusville.

AFTER a long period, he was able to figure out the meaning of the continuous message. "Are you there?" was being tapped out, "are you there?"

Overton looked around the cell and found a tin cup. Raising it to the stone, he began to tap out his reply to the message, at first in faltering code. "Yes!" he tapped out with the cup, "yes! yes!"

Soon, the message changed. And during the course of the next week, he was able to conduct an entire conversation in the tapped-out Morse code.

He discovered, to his amazement, that he was in a Nazi concentration camp at Oranienburg, in the suburbs of Berlin.

"You're the American who was brought in last week," he decoded from the taps that came through the wall.

"Who are you?" Overton asked.

"Frank Folmer," came back to him in code. "I'm a British Intelligence man. Dropped near Berlin by parachute. I've got some important *Wehrmacht* plans given to me by the Berlin underground. And I'd like to get them into the hands of my superiors," he continued, "if I could only find a way of getting out of here." There was a pause. Then came the tapped message, "I wouldn't be telling you all this if I didn't know that you were Captain Michael Tabor, of the American Intelligence." There was another pause. Then came, "The guard. See you this afternoon in exercise yard."

"So that's who I'm supposed to be," Overton thought, "Captain Michael Tabor, an American." The pain of the welts of the whipping he had received came back to him. "The brotherhood of pain," he thought. "Tabor has already died. I am still alive but on the brink of death. We were both being whipped to death at the same moment. And, somehow, I have taken over his body, for some reason or other. That's the answer to this strange transformation."

That afternoon, Overton was taken from his cell and put into a large dormitory together with about fifty other internes. Most of them were Germans. But, in a far corner, he caught sight of a tall, blonde, husky young man, There was something about the determination of his lantern-jaw that labeled him as being an Englishman. Overton was certain that he was the one who had tapped out the code messages to him through the stone walls.

He did not have to wait long to learn the truth. For, that afternoon, when the internees were driven out of their barracks into the exercise yard, Overton found himself side by side with

the Englishman.

"You're Tabor," the Englishman said.

Overton nodded his head. "And you're Folmer."

They shook hands silently. And when they saw a Gestapo man approaching, they separated with the whispered agreement that they would try to meet every day to talk things over.

"I'd heard about you," Folmer said some time later, "through the grapevine. That's why I contacted you via the Morse Code and told you about myself. If the Gestapo knew who I was, they'd pull me out of here in a jiffy."

"I can't see how you expect to escape from here," Overton said. "They've got more guards than internees, it seems."

"It isn't the guards I'm afraid of," Folmer replied and he inclined his head in the direction of the high barbed-wire fence that surrounded the exercise yard. "It's that!"

"Barbed wire?"

"More than that! It's charged with an electrical current. One poor fellow, half-crazed with pain, tried to go over it last week. Burned him to a crisp, quite. And incidentally blew out all the fuses in the camp. This is a new project," he explained further. "They haven't been able to devise a means yet of preventing a short-circuiting of the entire electrical system when someone gets caught on the fence."

OVERTON became lost in thought. Even when his friend warned him of the approach of a Gestapo guard, he did not seem to be aware of his surroundings. Only when Folmer jabbed him in the side did he come out of his brown study.

"What were you thinking of, Overton?" Folmer asked him that evening as they were preparing to go to bed.

Overton smiled. "Oh, nothing much," he replied, "just something that happened to strike me at the time."

It was when Folmer told him, a few days later, that, unless he was able to escape soon, the information he possessed regarding the German *Wehrmacht*, would lose its value to the British.

"It's about troop concentrations in Norway," he said, "and unless I can get the facts to my superiors, I'm afraid it'll be too late."

"Suppose you do get out of here," Overton asked, "how do you know you'll be able to get through to London?"

Folmer winked. "I've got friends on the outside," he said, "but they're not powerful enough to get in touch with me here so that I can relay the information to them or to get me out. They're waiting around, though, on the outside if I can manage to break out. But I'm afraid they'll have to wait a long time from the looks of things here."

"I don't know about that," Overton said thoughtfully.

"Got something up your sleeve?"

"Perhaps."

"What?"

.."It'll hold until tomorrow afternoon," Overton replied. "Meanwhile," he added, "if I were you I'd get to sleep as early as possible. You might need the extra strength and energy."

He turned away from Folmer and went directly to bed.

The next afternoon, as the two friends were lolling about the exercise yard, Overton drew Folmer to one side. "Could you make your escape in that direction," he asked, "if it were made possible for you to get over the wire?"

Folmer turned his head in the direction in which Overton had indicated. "That would be perfect," he said. As a matter of fact, there's a French underground unit located in a farmhouse almost in a direct line of that open field. I could weave my way through the tall grass, get into that clump of trees and, in a short while, be safe in the arms of the underground."

OVERTON looked around before speaking again. He saw that the armed Gestapo guards who patroled that particular spot were almost at the extreme ends of their beat. For only about another minute, their backs would be turned to them. After that, they would right about face smartly and return.

"Could you make it now?" he demanded breathlessly.

"What's on your mind?"

"A plan for your escape. Get ready! I'm going to throw myself on the wire!"

But Folmer grabbed hold of his arm. "I won't let you do it!" he protested. "There's no reason for you to kill yourself because of me!"

Out of the corner of his eye, Overton could see that the guards were still walking with their backs turned. "You've got to!" he said quietly. "It's the only way!"

"And have you kill yourself?"

"That wouldn't matter," Overton said. "I've got an odd feeling. Somehow, it seems to me that I'm dead already. . . ."

"Bosh!"

Overton continued through the interruption, "And that, in some strange way, I'm living now on borrowed time." He pulled his arm from Folmer's insistent grasp. "Hurry now!" he said. "Follow directly after me! I'll throw myself directly onto the wire. That will short-circuit the entire system. Then, with your rubber-soled gymshoes, you'll run over my body, in case the wire is not completely short-circuited and make your escape!"

"Don't do it!" Folmer implored.

But, when Overton had pulled himself away, Folmer followed immediately after, a few paces behind. He saw Overton approach the wire fence, in the center of two wide-spread posts, where the wire sagged in the middle. He tried to close his eyes when he saw his friend continue running forward, without stopping, and throw himself bodily at the strands of sagging wire. Immediately at contact, a bright, blinding flash of light came from Overton's body. And as Folmer continued forward, he could smell the sickly-sweet odor of burning human flesh issuing from tiny spirals of smoke that were curling up from Overton's body.

Without stopping, Folmer ran forward and leaped upon Overton's outstretched body. Up and over he went. Then he jumped clear of the fence and was soon speeding toward the field of tall grass directly ahead. For a split moment, he turned backward to view the scene he was leaving. The backs of the guards were still turned. If he could make the field in time, he could avoid being observed by them. And not until some time later would his absence be discovered. This would give him ample time to get through the field, the trees and into the clear of the Underground.

And, then, another sight caught his eye. It impinged itself on his brain in that fleeting second and, for the rest of his life, he was unable ever to forget it.

For, stretched out on the wire, his arms spread-eagled, he saw Overton—dead—as though he had been crucified.

THE automobile coughed its way up the steep incline. Finally, when it reached the top of the peak, it spurted

forward on the flat road. In the car, U.S. Deputy Marshal Mike Rafferty sat behind the wheel with his friend "Shorty" Summers, of the Bar Y Ranch.

"The Penitentes had quite a shindig up here," Rafferty said to Shorty. "So I thought I'd drop up and see how things come out." He chewed the ever-present blade of grass in his mouth. "Never can tell what's going to happen to those guys when a tenderfoot's up among 'em!"

Shorty suddenly cried out. "Lookee!" he said.

Rafferty looked ahead. Off of the road, to one side, he saw an enormous cross. Around it were stationed other smaller crosses. It was the site of the Penitente's annual crucifixion.

"What's wrong?" he demanded.

"At the big cross!" Shorty cried. "There's a man strung up on it!"

"Damn!" Rafferty stepped on the accelerator and soon had the car near to where the crosses were standing. He hastily got out and, followed by Shorty, went over to where the largest cross was standing. Shorty shinnied up the upright and, with a knife, cut the cords from around the dead body so that it fell to the ground with a bump. Then he shinnied down to where Marshal Rafferty was standing next to the body.

"Who it is?" Shorty demanded.

"The tenderfoot, all right!" Rafferty sniffed the air. "Smell anything funny?" he asked.

Shorty sniffed. "Yeah," he said, "like something burning, like me when I got my hand caught in the branding fire!"

The Marshal bent down and examined the body more closely. He seemed particularly interested in the enormous, blistered welts that criss-crossed the corpse.

"Hmm!" he said aloud as he spat out the chewed-up blade of grass, "first time I ever heard of the Penitentes doing a thing like that."

"Like what?"

"Like electrocuting their victims with live wires," he announced, shaking his head dolefully as he turned away to return to the car for a stretcher.

THE END

THE SEARCH FOR POWER

By ANSON COLMAN

IN THE never-ending search which engineers are carrying on for new sources of power, there appears constantly new ideas of harnessing everyday phenomena to man's tasks. It is becoming more evident each day that the supply of power from coal and other fuels is distinctly limited, especially when compared to the ever-increasing rate of use. Estimates of the day of reckoning vary, but 200 years seems conservative. What will happen to our vaunted mechanical world then, we can only guess.

To answer this problem, scientists and engineers throughout the world are working strenuously to find new sources of power. Their work has taken them far and wide, from one corner of the earth to the other to discover new supplies of coal. Others, aware that such discoveries will only delay the day of power exhaustion, are trying to find new ways of utilizing natural phenomena which, they all agree, contain limitless supplies of power.

In these investigations great progress has already been made. Investigators have found dozens of other sources for this power, and any one of them would supply energy far beyond our possible needs . . . that is, if a way can be found to release this power for man's use.

From time immemorial men have dreamed of harnessing the power of the sun. It has been their hope that they could make use directly of the light and heat which is given off by the sun in such enormous quantities. Enough solar heat is received to melt a terrestial layer of ice 424 feet thick every year. Engineers have estimated that during an eight hour day in the tropics, the sun lavished on a single square mile energy equivilent to that released by the combustion of 7400 tons of coal. About eighteen hundred times more energy inundates the Sahara that is contained in the coal mined in the course of a year. And in a single day that vast desert space receives three

times as much energy as is contained in all the coal we burn in an entire year.

There have been many attempts to harness the tremendous energy which falls upon the earth each day. John Ericsson, the ingenious builder of the Monitor, was the first to invent a trap to catch this free energy. He invented a huge concave mirror which reflected and concentrated the sun's rays on a blackened boiler at the focal point and which was mechanically turned so that it followed the sun. Ericsson generated steam in his strange boiler and succeeded in driving pumps and other machines with high efficiency.

Professor Baly has tried to capture the power of the sun for human use by imitating the material processes whereby the "living vegetable cells" of green plants store and utilize solar power. With the aid of the sun's ultra-violet rays, he has made sugar out of carbon dioxide. It has been calculated that, in a tank about 100 feet square, 374 pounds of sugar, the equivalent of 154 pounds of coal, can thus be synthesized. Some experimenters suggest that some day sugar will be produced synthetically so cheaply that it will replace coal as a source of energy.

The difficulties inherent in directly utilizing the energy of the sun seem overwhelming. Other scientists have turned to the tropical seas as a source of power to save the situation. Professor George Claude, inventor of the neon light, and Dr. Nikola Tesla, have maintained for a long time that the thermal energy in the bottom of the tropical seas is immeasurable. Professor Claude has told the French Academy of Science that the construction of the necessary plant is no more diffcult than the laying of a transatlantic cable.

Not satisfied with just discussing the possibilities of utilizing the inexhaustible store of power in tropical waters, Professor Claude has taken the first practical step in that direction. At his Matanzas, Cuba, plant he has, with the aid of a giant tube, converted the varying energies of the ocean into power with which to light electric bulbs. The principle is a simple one. In the tropic seas are two water supplies of unlimited qualities and unchanging temperatures throughout the year. There are the surface waters which retain a temperature varying between 79 and 86 degrees Fahrenheit, with a maximum variation at any one place of five degrees. Then there are the icy waters found at a depth of 1000 yards or more of a constant temperature of 40 degrees Fahrenheit, which rarely varies more than one or two degrees throughout the year.

The device which Professor Claude has created makes use of this steady variation in temperature on a principle similar to that applied in the steam boiler. Instead of applying fuel to heat the water to the boiling point of 212 degrees Fahrenheit, however, he makes use of the well-known principle that water can be made to boil at any temperature by correspondingly lowering the pressure. On the top of a mountain, water boils more easily than at sea level because the atmosphere does not press down upon it so hard. By producing a vacuum it is thus possible to make the surface water of the sea boil at its normal temperature of 79 to 86 degrees. The French scientist uses a special pump to produce the desired vacuum and to make the sea water boil.

The steam thus generated is made to pass against a turbine. It makes the turbine turn and then passes on to a condenser. At this point, through a giant pipe-line, waters from the lower depths at a temperature near freezing are lifted to the surface and sent through the condenser, compressing the steam exhausted from the turbine. This causes a vacuum which again lowers the pressure on the surface waters and causes them to boil over, producing more steam to make the turbine go. The turbine is connected to a shaft of a dynamo which generates electric power. The starting vacuum pump is cut off after the water in the "boiler" begins to give off steam, the sea itself at this stage becoming the agency which produces the vacuum to boil the surface waters and to condense the steam.

These two methods by no means designate the limit of possible new sources of power. Engineers claim, for example, that inexhaustible power can be obtained by taking advantage of the intense heat in the earth's vast interior. The late Sir Charles A. Parsons, inventor of the steam turbine and one of the great engineers of our time, once laid a plan before the British Association for the Advancement of Science for sinking a shaft twelve miles down into the center of the earth. Such a hole would cost from $25,000,000 to $100,000,000. It would have to overcome the terrific heat, boiling hot water gushing from subterranean springs, and immense pressures. Such a project, however, could easily supply the energy far beyond the requirements for the entire United States.

Other scientists have spoken about and experimented with the use of wind power. It is calculated that there is at least 5000 times as much energy in the free winds as in the world's annual coal production. The imaginative J. B. Haldane has predicted that some day all homes may be equipped with a metallic windmill working electric motors which in their turn would supply the current need to run the household. The solution to the problem of maintaining a steady supply of the power in the face of the capriciousness of the wind could be to allow the wind to drive electric generators and that the electrical power be bottled in storage batteries for use whenever needed. If some satisfactory storage system mechanism is ever developed, wind power would provide more than enough energy to drive all the world's machinery.

Despite all difficulties, scientists throughout the world have confidence that we will not only find a ready substitute for coal, but we will discover new sources of power that will turn the wheels of the world more cheaply and more efficiently than ever before.

TRUK ISLAND

By BERKELEY LIVINGSTON

Deadly rays from the darting aircraft were pounding the Japanese fortifications into invisible piles of rubble

LONG before Pearl Harbor, three Americans were waging relentless war against a subterranean race of Japs

"SORRY, Tom, but I think your idea smells."

Tom Flynn stopped pacing back and forth past his desk and looked at the speaker.

Larry Upton sat upon the stationary bicycle in Flynn's office. He was intent on the meter attached to the handlebars and was pedaling as hard as his legs could churn.

Flynn, his flushed face reflecting the disappointment he felt, took the cigar from his lips, eyed the charred end, then threw it away.

"Aw now, Larry," he said placatingly, "don't be a damn fool. Can't you see—"

Larry broke in, without looking up: "How fast ya think I'm goin', Tom?"

Flynn strolled over, looked at the meter, and said:

"Oh, 'bout forty I guess . . . Aw now, Larry, cut the clownin'! Forgan's waiting for an answer. He's got Miss Hart in his office right now; and from what I've seen of that dame—whew!"

He blew his breath out explosively to show his disapproval of Miss Hart.

Larry Upton smiled at Flynn's gesture. It was an affectionate smile. Larry had a deep admiration for the plump little man in the extravagantly striped blazer. He liked his flamboy-

ant manner; his huge office with the gymnastic fittings; his penchant for loud clothes and expensive cigars. Aside from those extraneous Hollywood mannerisms, Larry liked Tom Flynn for those things which made him what he was, one of the motion picture industry's best loved producers.

"What the hell's the matter with you, boy? You've been in this screwy business for ten years——"

"You're not complaining, are you, Tom?" Larry broke in. He had stopped his furious pedaling.

"—and when I give you—— Who's complaining? Best stunt man in Hollywood—your chance at the biggest thing we've ever tried, you give me the go-by."

Upton's voice was gentle but the irony in his voice was not lost on Flynn when he answered:

"Sure. You're giving me a chance. At what? Playing nursemaid to this Hart woman?"

Flynn sighed windily and wished again he was back in the contracting business. Bricks, mortar and forms were such substantial things. This picture business was so God-damned irritating.

Take Larry Upton for instance. He had the three things that went to make for becoming a star: looks, figure, personality. But did he capitalize on them? No! He was satisfied with being a stunt man. Flynn gave him mental credit for at least being the *best* stunt man in Hollywood. Which thought brought him back to *why* he had called Upton in.

"Now look, Larry," he began again, conciliation deep in his tone, "look at this thing from my viewpoint. Forgan's the big shot in Apex. He gets a brainstorm a while back. About this Emily Hart dame. First woman to fly the Atlantic. He remembers she said she wants to fly around the world. So *he*, the goon, offers to finance that little trip."

"So that's how Miss Hart became a member of the Apex Newsreel family," Larry reflected aloud.

"Yep!" Flynn said. "So he's financing the ride. To the tune of half a million. D'ya see why I called you in? You're our insurance. That dame may be the greatest flyer in the world. But she can't do it alone."

LARRY got off the cycle and walking over to Flynn's desk, seated himself in Flynn's chair. He lit a cigarette and said casually:

"Okay, I get it. Now give me the actual set-up. And never mind the glory at the end of the rainbow."

Flynn grinned in relief. He had won Upton over.

"That's swell, Larry," he said gratefully. "Sure, I'll give you the set-up. And it ain't clean either. As far as you're concerned, it's going to be one hell of a mess.

"You're going along as navigator and co-pilot. Dick Crane'll handle the camera details. Arrang—— What's wrong now?"

Upton's face had lost its air of good-natured indulgence. Anger made white dimples at the corners of his mouth. A muscle beat a tattoo under the skin of his jaw.

"What's that about Crane?" he asked in a low voice.

"He's going to handle the camera angle. That's what it's all about. Apex financed the deal with the stipulation we get exclusive film coverage. First time in history that——"

"Count me out!"

"Why?"

"Crane's in."

"Smatter, Larry—afraid?"

"You know better. I just don't

want any trouble."

"Aw listen, Larry," Flynn burst out in exasperation, "why the hell don't you forget about it?"

"Look. I don't like 'Camera' Crane. And if I'm going to be in his company for any length of time—well—planes have doors."

"Sure. And both you guys have red-hot tempers. So Apex loses half a million, Tom Flynn goes back to the contracting business and——"

"What's that Tom?" Upton asked in surprise.

"That's right," came the calm answer. "Why d'ya think I'm so hepped up on all this? Apex is in a hole. This thing can get us out. But only with your help. Sure we can get pilots. Lots. But none like Larry Upton. Take my word. Without you it's a failure. And I'll be washed up, along with Apex."

"Okay, Tom, you win. But get this! I'm doing it for you. So better tell Crane to stay out of my way."

Flynn grinned inwardly. He didn't relish the trick he'd pulled on Upton. There was one truth, however, among the lies. Larry Upton *was* the best pilot they could possibly find.

"Great!" he exclaimed. "Let's go over and see Forgan. He's got Miss Hart in his office now; so you can meet her and settle whatever details need to be settled."

EMILY HART was in Forgan's office, all right. They could hear her voice even in the corridor outside the office. As Flynn opened the outer office door, they heard her voice.

"—and understand this! I'm to be in sole charge. If you've any idea of using me as publicity bait, you can just get it out of your mind. Because I'm going to hold you to the letter of our contract."

They heard Forgan's deep-throated reply:

"Don't worry, Miss Hart. You're in charge. Just as you wanted. But the movie angle must be run by my men."

"Not if I——" Emily Hart stopped short in her heated retort. The door had opened and two men stood on the threshold. One was short, middle-aged, with a red, childish-looking face. She smiled at sight of the awning striped blazer he wore. Then she noticed his companion and a puzzled pucker creased her forehead. She knew the little man, but his tall, handsome companion . . .

Flynn led the way, going directly to the girl and saying, as he took her hand in both of his:

"Hello, my dear. Still letting your temper run away with you, I see." Then to the tall, gray-haired man who stood glowering down at the girl, "Now, Jim. I'm surprised!" She didn't see the broad wink he gave Forgan. "Pickin' on Miss Emily again."

"By the way, Emily," he continued, motioning Larry over, "let me introduce Larry Upton your co-pilot."

Larry started to acknowledge the introduction when she suddenly let her hand drop and said:

"So! Now I get it. Glamor-boy here is to be my pilot, is he? Not if I can help it. Forgan, you're head of Apex. You're also head of Colossal Productions. Now I know why the picture tie-in with this trip. Glamor-boy here is——"

"Please, Miss Emily," Flynn hastily broke in, trying to stop her. He had seen the storm brewing in Larry's eyes. But it was no use. She continued, as though Flynn didn't exist:

"—going to be Colossal's new 'hero.' I can see the paper and magazine features all ready set up for——"

"Jealous, beautiful?"

She stopped short and turned from Forgan to confront Larry. Angry color swept into her cheeks.

"What did you say?"

He repeated the question.

Her lips curved in a sweet smile. Then her hand moved up—too swiftly for Larry to prevent—in a vicious slap that left white finger marks against his suddenly reddened skin.

"That," she said, still smiling, "was for your ego, not for what you said."

"You know," Larry said through pursed lips, "I think I'm going to like this trip. You're going to be there and Dick Crane. I'm going to have to take care of three things: a plane, Crane and Emily Hart."

"Don't concern yourself about me, glamor-boy. I'm walking out on this deal."

Larry's eyes were directed over her head, as if he were seeing new horizons. He said:

"So Emily Hart, the famous aviatrix, takes a powder on Apex. But that's only to be expected. If she can't play, there's no ball game. And the half-million Apex has spent—well, they have a plane for it."

He suddenly looked her straight in the eyes.

"Or is it that Miss Hart is afraid I may want to share the spotlight? Because if she is, she can stop worrying. I'm afraid I'm going to be much too busy to give a hang, one way or the other."

THEIR eyes met . . . held. Abruptly Larry turned and left the office, closing the door gently behind him.

Miss Hart appeared bored—if you didn't notice her eyes. She said: "He pouts nicely, does our pretty boy . . . All right, Forgan, you can make the final arrangements. Tell Upton to meet me at the Frisco airport on the sixteenth. We'll need a few days' workout on the plane. Have Crane down there too."

Flynn watched the trim figure of Emily Hart walk out. He wiped a fine bead of perspiration from his brow. There was a glint of anger in his eyes as he turned sharply to face Forgan.

"Jim Forgan," he rasped, "you're the damndest fool I've ever known. First, this round-the-world-flight brainstorm. Then you get this tempermental girl for the job. That's bad enough. So you had to make it worse by getting a fight-happy cameraman like Crane. And to top it off, you want Upton for co-pilot. Where the hell is your sense?"

"Now take it easy, Tom," Forgan pleaded. "Getting mad isn't going to make things better."

"No. But I've been wantin' to tell you off ever since this thing began. I don't want to be a kill-joy, but——Oh hell, Jim, no use going any further. It's done. All we can do is hope for the best."

Flynn sighed heavily. A sigh in which he was joined by Forgan. They turned, as if by mutual agreement, to face the picture of a two-motored plane which hung on the wall behind Forgan's desk. Black letters along the gleaming sides read, *The Argo*.

CHAPTER II

BELOW, the Pacific was blue; bluer than any water Larry Upton had ever seen. Now and then the blue became flecked with white: waves breaking. Cloud pillars stretched limitless miles, covering the foreground from water-line to sky. Their feather edges were golden-tinted, the reflection of a setting sun.

It was Larry's turn at the controls. He sat there, body comfortable against

the seat, and silently ruminated on the past few days. They hadn't, somehow, been as he had imagined they'd be.

He had been burning with anger when he left Forgan's office. His anger was directed at Flynn, Forgan and the red-haired Miss Hart. But mostly he had been mad at himself. For letting Flynn talk him into this ridiculous business and for putting himself into a position where he had to follow through.

Then he came down to the San Francisco airport and had received the first of a number of surprises. Emily Hart, a trim figure in flying togs, had welcomed him warmly. He couldn't imagine why, after the reception she had given him in Forgan's office. She had shown him through *The Argo,* the plane they were going to use. She was wildly enthusiastic about it, an enthusiasm in which he shared.

For the ship was a pilot's dream plane. The latest in aero-dynamic science had gone into its construction. A special dark room had been installed so that Crane could develop any film he shot, without waiting to reach places where it could otherwise be done. Further, all the latest inventions of the airplane world had been installed. Defrosters on the wing flaps, gyroscope controls, the finest of two-way radio equipment, and the latest type of liquid-cooled engines. It was a perfect plane.

He remembered their reception at Honolulu . . . and felt the plane lurch. Quickly he looked about him and his throat tightened.

That huge cloud world which had seemed so far away, was now all around them. They were flying through grayish-black mist; a world of vapor. Pale, brush-like fire gleamed along the wing edges.

"Damn!" Larry whispered the expletive silently. "Should've kept a sharper lookout. Now we're in for it. I've got to climb out of this mess."

He saw the altimeter needle hovering at the eight thousand mark. He was surprised, because they usually flew at six thousand. The air currents were less treacherous at that point.

Suddenly a huge fork of lightning shot out of the black, thunder cannonaded against his ear-drums, and rain poured from the cloud masses. He felt, rather than saw, Emily Hart crawl into the seat beside him. He watched her from the corner of his eye. Lightning illuminated her features and lent an unearthly glow to her golden-colored skin. Her auburn hair seemed to flame in the unnatural brightness. She smiled and said:

"Our first storm! Reminds me of one I was in over the Atlantic."

Larry was too busy with the controls to vouchsafe more than a grunted, "Yes?"

Something was wrong. Very wrong! The plane wouldn't climb! In fact he had to fight to keep it level. She kept on talking: something about some fool storm she had once been in. He wished she would stop talking. Finally he snarled:

"Shut up! And see if the gyroscope is working."

She returned in a few seconds. Softly she delivered the blow:

"No."

LARRY had flown in storms before. But never one like this. It seemed possessed with a positive physical will. A will that was set on their destruction. A demonic wind had arisen, buffeting them about as if the plane were a puffball. In a matter of seconds they would fall and rise thousands of feet.

The fury of the storm increased. The thunder and lightning were continuous. Larry became aware of a third person

in the pilot's cabin. It was Crane, their cameraman.

Dimly he heard Crane's hoarse voice. But now he was conscious only of two things: this mad storm and the ship. For a few moments the wind relented and the plane flew on an even keel. But at an unbelievable speed. Larry looked at the gauge in shocked disbelief. Three hundred and fifty miles an hour! It couldn't be. No wind was that strong.

Then the wind possessed them again. It spun them around like a top. Larry felt Crane's barrel-like body strike against his chair and carom off. His body pressed against the restraining strap as the plane went into a nose dive. He heard Emily Hart give voice to a protesting squeal as the strip bit deep into her middle. It was the only sound she made. His wrist and fingers felt numb from fighting the controls. Nothing he could do seemed to help.

Down they went—to a thousand feet; then abruptly the plane straightened and flew onward. Again Larry tried to ascend. And again his efforts proved futile.

He became aware of something wet falling against the back of his neck. He turned and stared into the face of Crane. Crane's nose was bleeding and the red drops were what Larry had felt.

"Well, hot-shot, what do we do now?" Crane rumbled. His squat thick body was braced against the pilot seat, while his hands gripped the arm braces in the wall. His hoarse voice was oddly matter-of-fact.

"You ever pray?" Larry asked.

"Why?"

"Well, you'd better do just that. Because only a prayer can help us now."

"H'm. So that's it? Guess I'll stick around for the finale," Crane said. There was no fear in his voice. Only a calm acceptance of the situation.

Larry felt a grudging respect for the man. In spit of his dislike for Crane, he had to admire the man's courage. He remembered, too, that Crane had been unusually civil during the trip, a fact Larry attributed to Flynn.

Then his attention came back to the plane again. The controls! They felt strangely light to his fingers. Hastily he worked at them for a few seconds. They responded beautifully. Too well in fact. It was as though they were immersed in oil. They gave meaninglessly to his slightest touch. Even as he jiggled the stick back and forth, Larry gave the terse command:

"Life jackets! The controls are shot! Crane—radio our position; the girl'll give it to you——

"Sorry, Larry." She spoke for the first time since he had told her to "shut up." "Our radio is shot too. So I guess we'd all better take your advice. And pray."

He turned a wondering glance in her direction. Her lips bore a pensive smile. And her narrow green eyes were unafraid. Suddenly he grinned. Maybe he was wrong about these two. And the courage which the wind had drained from him returned.

HE PEERED ahead and to the sides, trying to pierce the semi-gloom. The lightning and thunder had disappeared. Only the wind remained. The clouds hung thick as ever about them. Then he noticed the compass. It was pointing west by south-west. He couldn't understand. It was as though the wind was purposely blowing them in that direction. An hour went by. And they still sped at that mad three hundred and fifty miles an hour pace.

Larry saw now that the clouds were turning darker. Night was falling. Then, as suddenly as they had entered them, they were out of the clouds, the wind and the storm. Out of the frying

pan and into the fire. A thousand feet of altitude and a plane out of control. It was hopeless and Larry knew it.

Below, the ocean ran in long swells. The horizon cut a setting sun neatly in two. It was the end.

"Crane," Larry issued quick commands, "get some stuff into that raft. Drop it through the hatchway. Then you and Miss Hart hit the silk. I'll take our log and follow."

Neither Crane nor the girl hesitated. In a few seconds they were at the hatchway, waiting for him.

"Jump," he shouted, as he felt the ship's nose turn downward. He saw the girl start back. Then Crane had his arm around her waist . . . and they were gone. He watched with bated breath, then breathed a sigh of relief when he saw the parachutes blossom out. Then he was busy with the plane again.

It was just starting into a slow, spiraling spin, the outcome of which would be a head-on crash with the ocean. Already it was too late for Larry to follow the other two. He had but one choice. To stick with the plane and hope for a belly landing. And enough time to get out before the plane sank.

It all took a matter of a few seconds. He had time only to unsnap the safety belt and switch off the ignition. Then there was a deep blue world of water all about him. Almost hopelessly he tugged at the loose controls. And felt them take hold. But the motors were out! He knew the plane wouldn't level off. It did though; for the barest second. And then it crashed.

Larry Upton flew forward to land with a thud against the instrument panel. His head struck hard against the glass; pain sent waves of blackness through it and he lost his senses.

PAIN licked at his forehead, when he opened his eyes. Then he gasped and strangled on salt water.

"Ugh, ugh," he gasped, rolling his head to see where he was. There was an arm around his chest—Crane's arm. He turned and saw the other's face. There was a wide grin on it.

"Hello, hot-shot," Crane said, as he swam in a strong, one-armed crawl.

Larry nodded weakly. For the moment he was content just to be carried along this way. Then, as strength returned to his weary body, he twisted away from Crane and began to swim under his own power. Crane pointed to a bobbing object fifty yards off. Larry recognized it as the rubber raft. Emily Hart was on it, waving them on. She helped Crane drag him aboard. Larry lay there for a few moments until he felt the numbness leave his mind and body. The other man and the woman regarded him intently as he lay there.

Overhead, the first stars were appearing. The short tropic twilight was ending. The sky appeared serene and blue-black. Of the storm there was no sign. The three lay silent for a time. Then Crane said:

"Okay. Here we are, floating around on this hunk of rubber. What do we do now?"

Crane asked the question of Larry. It was his way of asking him to assume the leadership.

"How do we stand on provisions?" was Larry's first question.

"We don't! The guys who thought up those kits forgot to pack them in floatable containers. All we have is what you see."

And what Larry saw didn't do much for his morale. They were on a rubber raft, seven by five feet in size, and about eight inches deep. It was seaworthy if the water remained calm. But even in the swell that was running, it was shipping a little water. Larry was afraid to think of what could hap-

pen in a heavy sea.

"We could be worse off," he said after deliberation.

"Oh yeah?" Crane retorted. "Not much. No food, no nothing; here we are on this skimpy raincoat, and hot-shot here says we could be worse off. I suppose you got it all figured out—just how soon we'll be picked up, and all that."

Larry's temper flared up.

"We can skip the wise-cracks, mister," he said hotly. "Matter of fact, we'll sight land within twenty-four hours. Think that tender belly of yours can do without food that long?"

"Don't worry about my gut being able to take it. You'd just better be right, hot-shot."

"And if I'm not?"

"Just a moment, gentlemen."

They turned startled faces to Emily Hart. The accent on the word *gentlemen* had not escaped them.

"If you two barroom brawlers don't mind, I'd like to ask a question or two myself. Would Mr. Upton mind explaining how he deduced we'd sight land in twenty-four hours?"

LARRY gave her a sour look. These women! Always sticking in their lip at the wrong time. And of course this was the wrong time, because he had no answer to her question. He answered without hesitation, however. It would have been fatal to do anything else.

"Sure, I'll explain. Eight hours out of Hawaii. About eighteen hundred miles. Then the storm. Wind blew us west by southwest at three hundred and fifty miles an hour for about two hours. Now look at our raft's drift. Northwest. We plotted our course to by-pass the Carolines. But the wind blew us practically over them. So I say that with this drift we'll hit one of those atolls before another day."

He was a little surprised to see her take all that without question. He knew how lame it sounded to his own ears. But take it she did. For she turned on Crane and said:

"That's the answer to one question. Now, as for you, where do you think you are—on the Colossal lot? I know all about you and glamor-boy here. So save your fighting until we reach land."

Crane burst into raucous laughter.

"Glamor-boy she calls him. Haw haw. If that ain't the best! Okay, tutz, I'll keep shut."

Larry felt a retort rise to his lips but kept it down. Even in the face of Crane's gleeful chortling.

The two men spelled each other through the long night while the girl slept. She awoke with the sun's rising and took over the watch while they caught a few hours' sleep.

They were awakened by the gladdest cry they'd ever heard:

"Land! Larry! Crane! Look, over there!"

They saw it; a smudge of darkness against the blue water. They were still too far from it to make out the configuration of the land. But land it was. Several hours passed before they were close enough to know for certain that it was no mirage.

It was an island, of the sort usually to be found in that part of the Pacific. Larry saw the high ridge of a small mountain chain. Bits of driftwood came floating by, enough to give them a means of propulsion.

It was arduous work in the broiling heat of the afternoon sun. The men stripped to the waist. The girl envied them that privilege. While they rowed with the improvised oars, she kept a sharp lookout for signs of human habitation. She saw none.

Larry saw, on closer inspection, that

although there was a coral reef to the atoll—for that was what it proved to be—the surf rolled in smooth wavelets onto the sandy shore. He was glad to see the absence of breakers. Their craft was too fragile to have endured the pounding of heavy surf. And coral rock, he knew, was as sharp as a knife blade.

The beach on which they landed was breath-taking in its beauty. The coral gleamed pink and red and, within the rim of the ring, cocoa palms marched in stately procession down to the very shore of the island.

Larry permitted himself only a moment's look, then came right down to their immediate problem:

"Okay. We're here—safe and sound. And over there is an island of some sort. But this lagoon is too wide at this point. So let's beach the raft and see if we can't find a narrower crossing."

They were half-way around the rim, when they came to a dip in the coral. Larry was in the lead and as he came to the crest of the rise, he came face to face with a man in uniform. He was a Japanese sailor.

THEY stared at each other in surprise for a few seconds, then Larry extending his hand in a gesture of greeting, shouted:

"Bro—ther! Am I glad to see——" He stopped short in amazement as the sailor hissed a few strange words through his teeth, unslung the bayoneted rifle from his shoulders and thrust the point at Larry. Again he hissed through his teeth.

There was no mistaking the gesture, even if Larry couldn't understand the words. Larry's hands shot skyward, just as Crane and the girl came up. Again the hiss and gesture. Crane's hands aped Larry's.

The sailor motioned them forward. There was nothing else to do but obey.

"Say, what goes?" Crane whispered. Upton shrugged his shoulders as if to say, "How do I know?" But when he saw how pale the girl was, he said:

"Don't worry. The sailor boy can't speak English. But we're all right. This is probably one of the Caro——" His voice was rising as they walked along and their steps lagged. They didn't hear the sailor approach. Crane and Emily saw, too late, what happened.

The sailor shouted something and, with the words, reversed his rifle and drove the butt hard at the base of Larry's skull. Had the stock landed, his skull would have been split wide open. But just as the blow fell, Larry stepped on an outcropping of coral. That saved his life. For the butt of the rifle took him between the shoulder blades, knocking him down, almost out.

So paralyzing was the blow that he couldn't even lift his hands to cushion his fall. The fine coral sand lacerated his face. He lay there in agony, waiting for the pain to pass. Dimly he heard shouted words and the sound of a scuffle. Then there was a grunted sound and the *smack* of a fist being driven home. The sound pleased him. If only he could help. His arms had become no more than leaden weights.

Again that smacking sound and then a high scream. It came from the girl. Larry rolled over on his back. What he saw gave strength to him which he had not known he possessed. The Japanese, rifle held at the ready, was about to impale Crane, prostrate, on the bayonet.

Larry scrambled to his hands and knees and dived head first at the sailor. It was a perfect football block, catching the other just behind the knees. The Jap's body arched backward for a second, then he fell forward as Larry

rolled hard against the pinioned legs. The rifle flew into the air. The tables were reversed; for now it was Crane who held the gun.

"Get away from that yellow rat," Crane snarled. "I'm going to cut his guts out!"

"If you please, gentlemen," a crisp voice interrupted.

CRANE pivoted . . . . and let the rifle fall to the sand. Larry, scrambling erect, understood why when he saw who was confronting them.

It was a party of Japanese sailors, all armed. At the head was an officer of some kind. He held an automatic in his hand. His ragged mustache lifted to show yellowish, uneven teeth.

"That is better," he said. "And now, if you don't mind, how did this occur?"

Quickly, Larry explained. He finished by adding:

"All I can say is that it was a hell of a way to treat visitors!"

The officer smiled, bowed, and said:

"A thousand pardons! It was a mistake I shall soon rectify. . . . If you please."

He took Larry's arm and walked over to the recumbent Jap. The sailor started to scramble erect, but halted when the officer said something in the monotonous tones of their language. To Larry's horrified amazement, the sailor bent in an attitude of obeisance and murmured something to himself. Then the officer put his pistol to the back of the sailor's head and pulled the trigger.

Larry felt nausea grip him when he saw the effect of the shot. The bullet literally tore the man's head open and bone and blood spattered the sand.

"You see, Mr. Upton," said the officer in apologetic tones as he took Larry's arm again, "the man went beyond his line of duty when he attacked you. Death is the only discipline in that case."

"Hey," whispered Crane hoarsely, when Larry rejoined his companions, "that guy's a killer. Why, he——"

"Shh," Larry cautioned.

The officer had returned to his men. They heard him issue an order. The squad wheeled about and marched off as the officer came back to them.

"I have not spoken English in three years. Ever since, in fact, I left your Stanford University."

"I see," the girl said. "No wonder you speak our language so well."

"Thank you."

"But where are we bound for?"

"The Japanese mandated island of Truk."

Larry showed his surprise. Truk! He'd heard of it. And also heard of how secretive the Japs were about it. Something about them forbidding other nations access to the islands.

The captain was speaking, again:

"It is doubly an honor for me, Miss Hart, for I have long wanted to meet you."

"Really? Why?"

"Your flights have fascinated me. Particularly the one to France."

She wanted to know why.

"Because you have vision—you can see into the future. I believe you made that trip on behalf of the United States government, did you not?"

"Why, Captain, where did you hear such a thing?"

He shrugged and smiled.

"Nevertheless, your theory of stratospheric flight is very interesting. And very practical."

"Well, thank you, Captain."

He nodded his acknowledgement.

CRANE and Larry had been an interested audience to the dialogue.

Larry couldn't understand the girl. She had seen the captain kill the sailor. Yet she seemed to be the least affected of the three whites.

"As a student of the military art," the captain resumed, "I can see the advantage of such flying. Anti-aircraft has a limited range. Of course—— Ah, here we are."

The three looked up. A gig was drawn up on the beach. Half a dozen sailors, their pant-legs rolled to their knees, held the small boat steady, waiting for the party to arrive. A corvette stood a hundred yards off shore.

"Our home for this night," Homatuki—the captain—said. "Forgive the modesty of our welcome. Had we known——" he smiled and shrugged his shoulders eloquently.

The captain of the ship proved to be a Commander Hosubi, a plump little smiling man whose English consisted of, "Oh so?" "So solly," and "hello."

"Looks like a Jap waiter I used to know in a Sukiyaki joint out in Frisco," Crane whispered to Larry.

"Precisely what he was," Homatuki's voice floated over their shoulders. They were standing in the passageway before the quarters given to their use. They turned to face the ever smiling captain.

"How's that?" Crane demanded.

Homatuki nodded his head several times, as if he were pleased with his thoughts, but did not answer. Instead he said, "Good night, gentlemen," and passed on.

Crane snarled, "I don't like that yellow boy," and opened the door.

Larry could see that something was eating at the cameraman. And now that they were alone, Crane was going to spill his feelings. Larry sat on the lower of the two bunks the cabin possessed and watched Crane pace back and forth across the narrow room. He noticed again how much Crane resembled one of the orang-utans he'd seen in zoos. There was an ape-like look about Crane. Although he was of medium height, he had a barrel chest and tremendous shoulders. He was so top-heavy he walked with a stoop, as if the upper part of his body were too great a load to carry erect. Further, he had a broad, thick-skinned face, set in a perpetual scowl which narrowed the width of his forehead until it looked as though it began at his eyebrows.

"Look, hot-shot," Crane began, pausing directly in front of Larry, "you and me, we don't jibe. I guess we both know that. And why."

"Sure." Larry grinned up at the other's ferocious face. "I'm a pretty boy and a hot-shot pilot. And I don't like you either."

Crane grunted and resumed:

"So skip it for now. What I want to say is, I don't like this set-up. It stinks, for my money. Something about this Homa—something makes me think of a rat what's got a cat in a trap."

"And a very apt description, my boy. Carry on."

"So I say to forget our—uh—differences and stick together while we're here."

Larry stood up and strode over to Crane. He shook the other's ham-like hand and said:

"Agreed! Y'know, ape, there's times when I admire you. Right now, for instance. But let's hit the hay, eh?"

Crane didn't answer but began removing his salt-encrusted clothing. Just before Larry snapped off the wall light, he said casually:

"Oh, by the way, thanks for pulling me out of the ship."

It was an off-hand remark but Crane felt the depth of feeling behind it.

Gruffly he answered.

"Forget it. Besides, we got to save you for Colossal."

Larry laughed softly and turning on his side, was asleep in a matter of seconds.

CHAPTER III

THEIR clothing, when they donned it the next morning, was not only free of salt but had been washed and pressed as well. Someone had taken it from their cabin during the night and replaced it before dawn. That someone had also put a steel shutter over the port.

They looked at each other in an expressive silence, then both turned and started for the upper deck. They had a short journey. Only to the door. Beyond stood a blue-clad marine. He silently gestured them back.

Crane started to argue but Larry pulled at his sleeve, holding him silent.

"Look, buddy," Larry said. "Get Captain Homatuki; you know Homatuki?"

The marine nodded, then slammed the door in their faces.

"That I don't like," Larry murmured.

The marine had evidently understood; for a few moments later Homatuki's ever-smiling presence was with them.

Crane let go before Larry could stop him:

"Say! What's the idea?"

The Jap lifted questioning eyebrows.

"You know—the shutters on the port?"

Larry cut in:

"Don't mind him, Captain. Just an early morning grouch. But how's for some breakfast and——"

"Sorry, Upton," Homatuki said, "just breakfast; that will be all until we enter port. I have already instructed a steward to serve you here. You see, we are entering the harbor now and until we have landed I must ask you to remain in your quarters."

"So that was why the marine?"

The other nodded.

"Well, if that's the way it is. . . . How about having breakfast with us?" Larry suggested politely.

"Sorry, Upton. But I am having it with Commodore Hosubi—and Miss Hart."

The captain smiled again, bowed and left.

"Oh," Crane mimicked the other's voice, "so he's having it with Miss Hart, is he?"

"Yes," said Larry reflectively, "and I don't like it."

"Say!" Crane was suddenly reminded of something. "That dame's gettin' kind of thick with that guy."

"So what?" Larry flamed. "That's her affair."

Crane gave him an odd glance through narrowed eyes. But Upton had turned away and did not notice it. It was a glance compounded of irritation and bewilderment.

IT TOOK several hours for their ship to dock. And another before they were permitted on deck. A startled whistle was brought forth from Crane when he saw where they were. Even Larry exclaimed in amazement. It was like a small Pearl Harbor when the entire Pacific Fleet was in the bay.

There must have been at least a hundred fighting ships in the immense lagoon of the coral ring. Larry saw three battle-wagons and half a dozen carriers at anchorage. There were several dozen smaller craft and at least twenty large transports.

"Holy smoke!" said Crane, wide-eyed. "Looks like they've got their

whole fleet out here."

Homatuki joined them then. For once, his smile was gone. His face held a vast pride and arrogance. And his words held the same emotions:

"It stirs the senses, does it not? There"—he pointed to the closest carrier—"the Osaki, our latest. We have six in commission in her class alone. The greatest fleet of carriers in the world, and soon the world will know it."

Larry wondered what had brought that last remark on. He had no time for questions though, for already Homatuki was walking toward the gangplank. Larry saw the reason for his haste. Emily Hart was standing there, the portly commander at her side. They waited for the captain, then the three descended, Larry and Crane following.

As they trailed along behind the two Japs and the girl, Crane complained:

"Hell! I'm not going to like this place. Too hot."

Larry gave him a quizzical glance. Crane was bathed in perspiration. It ran in rivulets down his face and dripped onto his shirt, which was already soaked through from body sweat.

"The tropics, you know," Larry reminded him as he dabbed furiously at his own streaming pores.

Two cars were drawn up at the end of the wharf. Commander Hosubi shook hands formally with the three whites, said something to Homatuki, saluted, and stepped into one of the cars. The others entered the second car.

"I must report to my commanding officer," Homatuki explained. "That is where we are bound now. Afterward I will see about quarters for you."

Homatuki's commanding officer was a Colonel Toto. Larry had never seen a man so militaristic in appearance. Unlike most Japanese, Toto was tall and carried himself with a ramrod erectness. He had a short mustache clipped à la Hitler. And he spoke in terse clipped phrases. His English was not so good as Homatuki's.

He did not offer his hand but bowed stiffly with each introduction.

"So sorry for your accident," he said. "No use, anyway. No good."

"Why?" Larry asked.

"Would be interned," came the astounding reply. "Germany, England, France at war!"

"When? How?"

"Since yesterday."

"Holy smoke, Colonel, we've got to get back to the States! What about us?"

Colonel Toto looked at him coldly. Then instead of answering, he said something in Japanese to Homatuki. The captain interpreted:

"The Colonel is sorry, but he cannot answer that question now and begs to be excused. And now we will see about your quarters."

It was a polite dismissal. But it did not answer Larry's question. And Larry suddenly had the feeling that his questions weren't going to be answered . . . ever.

LATER that day Homatuki invited Larry and Crane to dinner, an invitation Larry wasted no time in accepting. The girl had also been invited and was already there when the two men arrived. Homatuki was a genial host, supervising the somewhat stolid-looking native servants. He apologized a half-dozen times for the meal, although it was complete even to the saki served in small, dainty cups.

Crane made a wry face after drinking a cup but the Japanese downed his with relish.

"So," Homatuki began after the

servants had cleared away the drinks and they relaxed on pillows, "Germany has attacked. We knew of course that she would."

"You knew?" Emily asked.

"Yes. Just as she knows our intentions. But let us speak of other things. Miss Hart tells me you are a pilot, Upton. What do you think of our latest attack planes?"

Larry remembered the squadrons of planes he had seen droning overhead several times.

"Pretty slick, from what I saw. Of course, I don't know how well they're made."

"There, you see, is the Western viewpoint, quality. How well are they made? We of the East have different viewpoints. Men and material are expendable—and replaceable. Each can but serve a momentary purpose. So we do not think too much of their quality."

"I don't think that's so, Captain," the girl remonstrated. "You boast of your ships and your conquests, labeling the generals and admirals who directed those operations, the best."

"And so they are, my dear Miss Hart, so they are."

"Some stuff," Crane put in sourly, "knocking off the Chinese. The trouble with you guys, you ain't never been up against class."

"Class?"

"Sure! Like the U. S. for instance. Why——" Larry had driven his elbow into Crane's ribs eliciting a protesting grunt from him.

"That's all right, Upton," Homatuki said. "I don't mind. In fact Crane represents the average American for me: loud, boastful and stupid. A stupidity shared, incidentally, by some of your statesmen."

"Hey!" Crane burst out again. "Take it easy."

"We of Japan have taken that stupidity into account. And soon, at the proper moment, Japan's destiny will be fulfilled."

"And what, may I ask," asked Larry softly, "is Japan's destiny?"

"The overthrow of the white races as overlords. We are the master race. Only we can rule."

"Very interesting. But how, Captain, how?"

"First a pooling of interests with the proper powers. Alliances, treaties, all the flummery of diplomacy; the lullabys, as it were, then when they are weakened from the prolonged struggle, we will step in."

"You mean against your own allies?"

"Allies? A word invented for use on a scrap of paper. Japan needs no allies. You saw a portion of our might assembled here. At the proper time we will strike! Pearl Harbor first, crippling your fleet there; then Singapore, Hong Kong, the Philippines, south to Australia, Vladivostok, Siberia, China proper. The wealth in oil, minerals, material of those nations will make us invincible. We are prepared to sacrifice ten million men. And we will conquer!"

THERE was an expression of such implacable hatred on the Jap's face that they were startled into silence.

"Holy cows, the guy's nuts!" Crane whispered under his breath. Even Larry thought the Jap a little mad. It was Emily Hart who voiced the question eating at Larry.

"Aren't you afraid we might repeat this rather startling information, Captain?"

"Afraid? Do not be childish. Besides it is not good manners for *guests* to repeat the host's gossip."

The accent he had placed on "guests" did not escape them.

"Don't you mean prisoners?" Larry said.

"A more pleasant word, Upton, is guest. Being a prisoner would lead to confining and, sometimes, disciplinary measures. As a guest of the Japanese government you will be permitted certain liberties. It will not be an altogether unpleasant existence."

"Ain't that gonna be just too God-damned ducky," Crane snarled, as he got to his feet. "But me, I'm gonna blow outa here. Right now!"

As if by magic, the snub-nosed automatic appeared in Homatuki's hand.

"Sit down, fool," he commanded.

Crane glowered for a moment. But the Jap held the trump card. He sat down.

"Upton, better advise your friend against doing anything so foolhardy as trying to escape. I will not be responsible for what happens. I assure you his punishment will not be light."

If Homatuki's boastful recital of Japan's plans didn't put a damper on any amenities which may have existed, Crane's action did. They sat in a resentful silence for a few more minutes, then Emily asked to be excused. Larry and Crane left soon afterward.

"So that's what we are—prisoners," Crane blurted when they came to the hut assigned to them.

Larry put his fingers to his lips in a gesture commanding silence. Then he turned out the lights Crane had switched on. A huge, full moon illuminated the grounds about the hut. Larry tiptoed to one of the two windows set in opposite sides of the walls. A quick look showed him the sentry pacing back and forth only fifteen yards from the hut. A fellow sentry also guarded the front entrance. They were prisoners in fact!

Larry sat down on the army cot that was his bed.

"Shut up," he said irately, as Crane started to beef again. "I want to think."

He remained silent for so long, Crane thought he had fallen asleep.

"Hey, hot-shot! What d'ya think?"

"Looks bad, ape," Larry answered. "You see, even if we escaped, where could we go? There's only one chance we have. Those planes—if we can get to one of those medium bombers I saw. But even if we do——" He left the rest unsaid.

Crane supplied the missing words:

"We couldn't get more than a couple a miles out, then—bingo—dead ducks. That'll be us."

"Right! So let's hit the hay. Tomorrow we'll see what's around here."

HOMATUKI was his usual bland self when he appeared the next morning.

Larry had warned Crane to be on his best behavior. Antagonizing the Jap would only make trouble. And they had to sail on peaceful waters for a while.

It developed, during the drive, that Homatuki was a captain in Marine Intelligence. And full of facts and figures.

"See there?" He pointed out a number of gun emplacements. "Antiaircraft. We could put up a curtain of fire that would be certain death for any pilot foolhardy enough to brave them. His entire island is ringed by them."

"You mean there are soldiers on the other side also?"

"Of course. This is Truk the focal point of our island empire. For its area, it is more impregnable than Japan itself."

Larry looked up at the mountains, several miles off. They were driving toward them. The Jap noticed the expression on Larry's face. His black

eyes glinted with amusement. Whatever caused it remained a mystery for the ten minutes required to reach their destination, a shallow, level-floored valley between two small, table-topped cliffs.

The valley was the scene of a great deal of confusion. Or so it seemed to the two white men. Huge piles of lumber were common, neatly stacked. Natives, tall, brown-skinned men, were engaged in taking boards from the piles to some sort of construction going on all over the valley. Larry and Crane were quick to note that the natives were guarded by armed Japanese soldiers.

"This, gentlemen, should prove of great interest to you," Homatuki began to explain. "If you will observe, those are the wooden frames of warships. Not scale models, but actual *and factual* dimensions. When the workmen are done, there will be eighteen warships here—from capital ships to destroyers."

"Don't get it," Larry said in a voice of boredom.

"Patience," Homatuki consoled. "This is *Pearl Harbor.*" He grinned broadly when he saw how the remark affected the two men. "Those ships you see are parts of your Pacific Fleet at anchor. When construction is ended, the scene will approximate the harbor to a startling degree."

"Yes?" Larry whispered. He wasn't aware of the hushed quality in his voice.

"Then the members of our naval air force will take off from the carriers in the harbor and practice bombing these wooden models. Of course it will take months to perfect the technique necessary—but we Orientals have the patience."

Larry felt his gorge rise. In his mind he could almost picture what Homatuki had envisioned. He laughed, a harsh sound. Crane's eyes narrowed in speculation as he watched Larry. He knew Larry better than the stunt man realized. That laugh—it meant trouble. Quickly Crane interjected a remark as oil to calm the rising waves:

"Sounds good, Cap. But who's gonna put our boys to sleep while all this is going on?"

Homatuki's shrug was eloquent of his feelings.

"What makes you think you are awake, my friend?" he asked.

There was no answer to that.

LARRY had regained his inward composure. A new thought had come to him.

"Say! Where do you get the laborers?"

Homatuki looked annoyed at the question. It was easy to see he wanted to continue his boasting.

"Those? Islanders. Good for what you see. A handful of rice a day, some cotton for their women and they are content."

"Yeah?" Crane grunted. "They don't look so contented to me."

Homatuki shrugged his shoulders.

"Why concern yourselves with them?" he asked. "Slaves, doing their work."

"Have they—that is," Larry asked carefully, "do they live on the island?"

Homatuki's attention had suddenly switched to the file of the brown men nearest them.

"Yes," he answered absently. He had been slapping his thigh with a riding crop he carried. "They have a village along the slope of that——" Then he made off at a run.

Larry and Crane looked confusedly at each other for a few seconds. Then, seeing what had brought the Jap's conversation to an end, they too ran to the scene.

The long line of moving figures had come to a stop. All eyes were fixed on a group of five near the center of the line. Larry and Crane arrived in time to hear Homatuki brusquely question one of the three soldiers in the small group. Larry looked down to where a native was lying on the ground. He was stunned to see it was a woman. Her terror-stricken eyes looked pleadingly at the Japs. And her breasts heaved in fear. Beside her stood a native, tall even by comparison to the others, all of whom were six-footers. Larry noticed on closer examination that there was a sprinkling of women and girls among the men. With the huge boards across their shoulders they all looked alike.

Larry looked at the native with interest. He was a beautiful physical specimen. But it wasn't the body that interested him. Rather it was the expression of the features—the proud, scornful look in the man's eyes, that held the white men's attention.

Homatuki finished his interrogation of the soldiers. Walking up to the native, he confronted him silently for a few seconds, teetering back and forth on his heels. The riding crop beat a soft tattoo against his leg. He spoke in English, for the whites' benefit.

"Matabi—again you interfered. You know the penalty, of course."

Softly the native answered:

"Guard hit Mamale. No good. She sick. Matabi no like. Hit guard."

"So," Homatuki said. "You struck the guard?" He turned and looked at one of the squat soldiers. Larry followed his glance and saw where the blow had landed—a purplish welt across one cheek.

Natabi nodded.

Then Homatuki struck him. Savagely he struck, using the riding crops butt—lashing furiously at the native's face—lashing until the blood came in streaks.

And Matabi stood and took the blows. Not even blinking his eyes as blow followed blow.

LARRY had seen many things. But this was something he couldn't understand. Even as he acted, his subconscious took note of several things: the inhuman look of callous indifference in the Jap's eyes; the soldiers, who had suddenly brought their rifles to bear on the natives; Matabi, who seemed to be so indifferent to his beating. All this Larry noticed, even as he twisted Homatuki around.

"Wait!" he commanded.

The other looked at him questioningly, then shook off Larry's hand as if the touch contaminated him.

Larry shook with anger. Crane sensing trouble was imminent moved up to stand beside the stunt man.

"Damn it, man!" Larry rasped. "You can't *do* that!"

"No?" Homatuki asked softly.

"No! Not even if he is what you call a slave. He's still a man. And besides, maybe he is right. Maybe that guard did——"

"Upton!" Homatuki said coldly. "It is no concern of yours. Your status is no different from his. It is only because you are amusing to me that you and your friend are not doing his work."

"Okay!" Larry's anger boiled over. "So we're prisoners. But get this, you egotistic goon——" He fell back suddenly, hand raised to cheek. Homatuki had lashed him with the riding crop.

Larry went cold inside. He heard an animal sound deep in Crane's throat and knew what it meant. Crane had taken all he could stand. And now he was going to do something about it. Quickly Larry grabbed at the hairy arm of the cameraman and pulled him back.

"Nix, ape, I'll take care of this," he said. His fingers felt gingerly of the welt the whip had raised. Then, as he let his hand drop, a broad smile appeared on his face. Crane looked at him in surprise. He couldn't see anything funny. But for the first time since he'd left Hollywood, Larry felt his old self again.

"Well, soldier boy," he said lightly, "what goes now?"

Homatuki's face became rigid in anger. The sneer in the white man's voice was too open to be ignored. He hissed an order to the guards. Immediately they stepped forward in threatening attitudes.

The Jap captain made a slight bow in the direction of the white men and said in a formal manner:

"This person deeply regrets the step he must take. But, because, you have violated our hospitality, your status of guest has been changed—to that of prisoner."

CHAPTER IV

EMILY Hart leaned back in the rattan chair and looked with unseeing eyes at the ceiling. A very pretty and very frightened native girl did ineffectual things to the few pieces of furniture in the small box-like room. A huge tropic butterfly wheeled in stately flight across the room and a two-inch beetle scurried across the wall to find sanctuary in a crevice.

Of these things the pretty red-haired girl in the chair had no consciousness. Colonel Toto had just left. And she sat dreamy-eyed and speculated on the fruits of his visit. It was not a bright picture he had painted. She remembered his exact words:

"So sorry, Miss Hart. Great inconvenience. But this is military outpost. No can leave. Please—you enjoy Japanese hospitality."

"But Colonel Toto," she had protested, "my family, friends, the people who backed my flight — what about them?"

He had been adamant. "Sorry. Can not release information of whereabouts." His face expressed a sorrow he didn't feel. "Will make *visit* pleasant. See? Servant." He pointed to the native girl, who cringed at his gesture. "What you need will try to give."

She had thanked him and after assuring him she would be glad to be his guest for dinner, he left.

She was startled to feel a touch at her hair. Jerking around in the chair, she was surprised to see the native girl standing behind her. Emily's sudden movement frightened the girl. She stood against the wall, her great brown eyes asking forgiveness.

"Oh, come here, you poor kid," Emily said, holding both hands out to her.

The girl looked at the beckoning hands but remained still. Then, when she saw the warm smile on the white woman's face, she ran to the sheltering arms and snuggled close to Emily.

Emily stroked the trembling body for a few seconds then led her to the bed and made her sit down.

"You're afraid, aren't you?" she asked cupping the girl's chin in her palm and forcing her to meet her eyes.

"No," the girl replied, "not—any—more."

"Why—you speak English! Where did you learn it?"

"Oh," said the girl, smiling now, "in Salua. It's an island not far from here. The missionaries taught us."

"White men?"

"Of course." The look of sadness returned.

"What's wrong?"

"They are not there anymore. No one is there."

"What do you mean?"

"Two years ago the Japanese came. They killed the"—she gulped—"the missionaries and all the men who resisted. Then they put us all on ships and brought us here."

"What for?"

The girl turned her head to look out the open door and windows before answering in a whisper:

"To work on the docks. And as servants. There were not enough people here to do the work. How I hate them!" she finished fiercely.

"I can understand," Emily said sympathetically.

There was a sound at the door and a low voice murmured something. Emily turned and saw a native woman standing on the threshold.

"It's for me," the girl said. "The colonel wants me."

"Oh. Then you'd better go. What is your name?"

"Riva."

EMILY watched her depart with a feeling of sorrow. The girl had been the first person in the vicinity to whom she had felt like talking, other than Larry and Crane. And of those two, she'd heard nothing in days. There was something evasive in the way the Japanese turned blank faces when she asked about them. She looked at the clean but barren room and for the first time felt hope leave her. She remembered the colonel's words again. And how he had hoped she would think of herself as his guest. Prisoner was what he had meant.

A breeze, hot and fetid with the odor of decaying jungle matter, came through the windows. Had Larry seen her then, he would not have believed that the girl who had shown so much courage could look so helpless. Her nose wrinkled in disgust, a sob rose in her throat and she threw herself across the bed and burst into tears. Sleep came to her then, after the tears were exhausted.

She awoke to the feeling of a gentle stroking of her hair. It was Riva. A pale moon showed her the native girl's features. Riva, seeing Emily was awake, lighted one of the two lamps.

"Hello, Riva," Emily said, arising and running her fingers through her hair.

"Hello, Missy," the girl said shyly. "Look what I have brought you."

Emily looked at the dress Riva held thrown across her arm.

"For heavens sake!" she exclaimed. Taking the dress from Riva, she held it at arms' length and gave vent to screams of laughter. Riva looked at her in frightened surprise.

"Don't worry, darling, I'm all right. In fact, I never felt better. Now tell me, where did you get this?"

"From Colonel Toto," the girl answered matter-of-factly. "For the dinner tonight."

"The dinner? Of course. I'd promised. Well, we'd better hurry, honey." Then she laughed again. "Oh, that dress! It's at least ten years behind times. And must have been made to a Geisha girl's taste."

An hour later Emily, radiant even in the antique dress, appeared at the colonel's private quarters. The half-dozen officers in the room came to attention as she walked at the colonel's side. Captain Homatuki gave her a smiling welcome. Deliberately she took Toto's arm. Homatuki stopped smiling.

Emily's arrival was the signal for dinner to begin. The Japanese were noisy eaters. And their language held a monotony of tone that irritated the senses.

"By the way, Colonel," Emily said, breaking her silence, "what's new with my friends?"

"Friends?" the Japanese asked politely, his face becoming blank. "They fine. Now on other side island."

She would have been satisfied with that had she not caught the smirk on Homatuki's face. His expression told her everything was not as simple as that. She knew now. The morning after their arrival, Homatuki had taken them for a car ride. He had returned alone. Three days had gone by. Nor had she even so much as heard about them during those days.

If only she could find out about them. She snapped mental fingers. Of course. Riva! She would know. But how to get to her? Well, that was simple. A headache. The woman's perogative the world over.

THE colonel and his staff were desolate at her illness. And excused her of course. The armed sentry, who had escorted her to her cabin, had barely marched away when Emily woke the sleeping girl.

"Riva," she whispered, "listen! You know the two white men—my friends?"

The girl nodded, wide-eyed.

"Do you know what happened to them?"

"Missy didn't know?"

"Know what, Riva? Tell me!" So excited did Emily become at the girl's words that she shook Riva.

"They are prisoners on the other side of compound. In the native quarters."

"Prisoners!"

"Yes, Missy. Homatuki——" As though the mention of his name had invoked him, he was standing in the doorway.

He stood there, silently taking in the two women. Then smiling, he motioned the girl out of the room. She scurried through the door like a frightened mouse.

Emily stood up and waited the captain's approach.

"So, Riva told you of your friends," he said. He took a lacquered cigarette case from his pocket and, after selecting one, offered the case to Emily. Shrugging his shoulders at her refusal, he continued:

"But do not worry about them, Miss Hart, they will be taken care of."

He smiled and came closer to her. Close enough so that she could see the moist glitter of his eyes. Homatuki was drunk.

Carefully, so as not to arouse his suspicion, she retreated from him.

"Does Colonel Toto know that you ——" she began.

He snickered.

"Pah! He's already so drunk he can't see. Besides, he likes only native woman. Now I am different. I like women of spirit and fire—white women!"

She stopped as if transfixed by his words. Then, before he was even aware of her intention, she stepped forward and struck him as hard as she could with her clenched fist.

Spittle flew from his mouth, as his head swiveled under the blow. But there was no weight behind her blow. Before she could take advantage, he had recovered and was upon her.

Imprisoning one hand behind her back, he pressed his face, oily with sweat, against her own. She struggled desperately, twisting in his grasp, trying with her free hand to reach his face.

But it was of no avail. Slowly, he forced her back. She heard the animal sounds deep in his throat. The meaning of those sounds made her redouble her efforts. For a second her hand was free and her nails bit deeply in the wet skin.

"Bite — scratch — " he whispered hoarsely. "That is what I— Ugh!" he groaned suddenly and let go.

He had relaxed for a bare second and

in that second she brought up her knee hard into his groin. Then, seeing him doubled up in pain, she started past him on a run for the door. And then he had her by a wrist. Twisting her savagely around, he sent her spinning back. She fell to her knees and he was upon her again.

The room whirled in a dizzying spin and . . . the voice of Larry Upton said:

"Well, if it isn't rat-face."

CHAPTER V

LARRY UPTON ran a sweaty forearm across a sweatier brow. His pick lay on the ground. Crane, stripped to the waist, as was Larry, looked more like an ape than ever with masses of black hair on his chest and belly. He stood beside Larry in the shallow rock quarry where they had been taken daily during the three days since their imprisonment.

Homatuki had not minced words.

"You will work, as these brown skinned slaves work, with pick and shovel—under the sun, until your manners have improved."

Both Larry and Crane had known hard labor. But never anything like this. They worked from sun-up to sundown, with perhaps a half-hour break to eat the half-cooked gruel the Japanese served for lunch. The white rock of the pit threw back the sun's rays—rays that tortured the eyes and blistered the body. Some fifty natives were their companions. Matabi was one of them.

Larry heard one of the guards shout something and knew it was time for the serving of the horrible mess that passed for food. Nodding his head for Crane to join him, he made for the shady side of the pit. Matabi followed at a distance calculated not to arouse any suspicion. They sat a few feet apart and conversed, although none of them looked at each other. To have been caught talking with one another would have brought punishment from one or more guards. Larry had seen one of the natives whipped into unconsciousness and left lying in the sun the day before. The man had died during the night. And the reason for the beating: he had taken a moment's rest from his labor.

Crane sat crossed-legged on the ground and dipped stolidly into the stew. Larry said:

"When, Matabi?"

The native lifted his head and glanced at the guard, twenty feet away, and answered swiftly:

"Tonight. Moon dies young. Be ready."

Larry's pulses leaped at the answer. He and Crane had been assigned to one of the corrugated iron sheds that served as labor barracks. It was hot and filthy and crowded. Men slept on the bare ground. Not even blankets were furnished to them.

They had barely laid down to sleep that first night, when Larry felt fingers press across his lips. Words came out of the darkness:

"No noise! Me Matabi. You save Matabi today. Matabi help you—friend——"

"How?" Larry asked.

"Soon. Friends come. Take you to Mouth of Gods." And with those words Matabi was gone. But the next day and night he had told more. Because of Larry's action, Matabi considered him a blood-brother and had sworn to help him escape. Not from the island but from the camp. He claimed to have a place where he could hide him. And now that night was here.

The day passed in measured slowness. With the sun's descending, the prisoners were marched back to their prison huts.

"Well, ape," Larry said to Crane, as they sat in the darkness, "this is it. Matabi said tonight."

"Yeah. I heard. But how? Jeez! That fence has barbed wire."

"I don't know how. But we've got to believe Matabi."

Larry kept looking through the open door. A sentry paced back and forth in the moonlight. Several hours passed. Then Larry noticed the sentry's shadow. It had grown perceptibly longer. The moon was descending.

Suddenly Larry's eyes went wide. The sentry had made a turn in the shadow of a tree near the fence. Turned and seemed to stop. Larry squinted but it was too far to see exactly what happened. But he would have sworn that suddenly there was someone beside the sentry there. Then there was no one! Not even a shadow. The moon had died. And so had the sentry.

MATABI slithered through the doorway. Larry drew him close beside Crane and himself.

"They wait," Matabi whispered, "near fence. Come." Then he pressed something into Larry's palm. Crane too received what had been given to Larry, for his voice said:

"Jeez, what a sticker! Man, I only *hope* I met one of the Nips."

Larry understood what he meant. Matabi had given each a native knife.

"Come," Matabi said again, and was gone through the door. Larry and Crane followed. The natives silently watched them leave.

They found Matabi at the fence. The Jap guard lay in the contorted position only death gives.

"Look!" Crane whispered hoarsely. But Larry had already seen. A woven grass mat had been thrown over the murderous spikes of the wire. In a few seconds they were over the barrier.

"Woman make," Matabi explained, as they moved off. "Yellow dwarf men think for house." He laughed softly, as though pleased with his ingenuity.

"Wait!" Larry commanded suddenly.

They paused and he went on: "We've got to get Miss Hart."

"Yeah," Crane agreed. "Yeah. But she's right in the camp. How we gonna manage?"

"Matabi can do," was the surprising answer. "Come." It seemed to be the password, for he led them in a circuitous path around the camp and so to the officers' area. He seemed to know exactly where he was going, for in a few minutes he stopped and said:

"There! White Missy's house. I wait here."

Larry and Crane made their way stealthily toward their goal. Lamplight glowed from a window. She was in there. Then Larry was through the door and pulling Homatuki from Emily.

The Jap twisted from his grasp and drove stiffened fingers into Larry's adam's apple. Larry gurgled and gasped for breath, even as his reflex blow caught the Jap on the side of the head. Homatuki staggered. His black eyes glittered evilly in the pale lamplight as he recovered and came at Larry again.

Larry backed away from the Jap and parried the pawing arms until his throat loosened and breath flowed evenly once more. And just in time; for Homatuki had suddenly grasped one of Larry's arms in both hands and twisting under the extended arm, pivoted Larry around with the intention of getting a hammerlock. But Larry instead of moving away from the grip pivoted inward driving his free elbow into the Jap's jaw. It almost knocked Homatuki out.

Before the captain could recover, Larry had driven home two pile-driver blows to the saffron-colored face, splitting the broad nose. Homatuki's eyes rolled in their sockets and he slumped forward into Larry's arms. As Larry automatically grasped the falling body, Homatuki played his trump card. He straightened up at the last instant and kicked hard at Larry's knee cap. Luckily for Larry the kick was low. Had it landed, the knee cap would have splintered. As it was, the kick sent Larry sprawling. Homatuki jerked at his holstered pistol, got it out—and fell flat on his face. The point of a native knife protruding three inches from his throat.

"One of my accomplishments," said Crane in a complacent voice as he walked over to the dead Jap. Turning him over, he placed a foot on the bloody face and pulled the knife free.

In the meantime Emily had run to the prostrate Upton and helped him rise. He flexed his aching leg and was convinced no harm had been done.

"Okay, baby," he said taking her arm. "No time to waste. We're leaving."

He stopped only long enough to take the dead Jap's pistol. Then they joined Matabi. It was amazing, the ease with which they made their escape. One moment they were entirely surrounded by danger; the next and they were in the jungle brush.

ALL through the night they wormed their way through the tangle of creepers and growth which was their path to safety. Dawn found them three-quarters of the way up the side of the mountain on which, Matabi insisted, was the Mouth of the Gods.

They were in a narrow opening in the dense brush when dawn finally broke. Larry and Crane were red-eyed from lack of sleep. A thousand crawling things had found sanctuary on their bodies. Leeches, thorns, insects had all taken their toll. Emily's clothing was reduced to little more than remnants.

They lay panting in the sweating, lush jungle and listened to Matabi.

"Soon dwarf men search. No find. White men hide in Mouth of Gods. No native go there. Taboo. Matabi no 'fraid. Soon see."

And again the torturing crawling. But not for long this time. Abruptly they were in the clear. Two hundred yards away, was the saw-toothed edge of the mountain top. They looked around with amazement. It was as if some giant had taken a cleaver and had made a line of demarcation: here shall be jungle and here shall be barren ground.

"Cripes!" gasped Crane. "Do we have to cross that?"

Larry couldn't blame Crane. He had never seen such a stretch of Godforsaken country in his life. Jumbled masses of blackish lava outcroppings; twisted stretches of barren rock and narrow fissures through which thin wreaths of yellowish odorous smoke poured, made it the most frightening kind of ground.

Matabi pointed upward again.

"See where Mouth is."

They looked and saw what he meant. Near the very crest of the mountain, a small overhang of rock gave an appearance of a human mouth. The lips of the cavern looked startlingly human. And the whitened rocks which lined the cavern, top and bottom, resembled teeth.

They looked at each other and then looked away. It seemed so hopeless. Even if they did find refuge within the cave, the Japs would soon find them Larry grinned weakly and started to say

something. And noticed Matabi. The native was in an attitude of watchful attention. As though he was listening for something. Then Larry heard it too. A sound from the brush behind them. The Japs! They had lost no time in taking up the chase.

"Go!" Matabi commanded. "Fast."

THE three whites needed no second command. Slipping and scrambling, first one then the other helping the girl, they started over the slippery, needle-sharp lava. They had covered almost a hundred yards when the Jap patrol burst through the jungle wall. There were a dozen men in the patrol. The leader spotted them immediately. And lost them. For the three had found a shallow trench-like depression which gave them protection against the rifle fire the Japs let loose.

But Larry knew it was only a question of time, and not very much of that, before they would be in the open. Then they would be at the mercy of the Japs. Even as he pulled Homatuki's pistol from the waistband of his trousers, he ordered Emily and Crane:

"Don't stop till you get to the cave. I'll cover."

Crane saw the necessity for Larry's action. But Emily paused, her face showing signs of hesitancy about leaving. Pulling her after him, Crane growled:

"Hot-shot's right! He's got a heater. Those Japs gotta come through here. He can hold 'em off for a few minutes anyway."

Although Larry's position had the advantage of surprise, it also had a weakness. He was as much in the open, once the Japanese got into the gully, as the Japs would be.

They piled into the gully at a run, rifles ready for use. The two lead men went down immediately, and the rest retreated at the officer's command.

There was an interval of silence. An interval in which Larry retreated another fifteen yards. A hasty glance over his shoulder showed Crane and the girl to be almost at the cave. Then there was the sound of rifles and rock splinters whistled around him. From the sounds, he knew they covered him from both sides. It was only a question of time now.

Quickly he arose and dashed to the shelter of a slope. He would be hidden there from one side of the attack. The leaden messengers of death did their utmost to reach him during his dash. But either the Jap's aim was bad or his own luck held.

His back pressed tight against the smooth hard surface of the gully side. He peered through narrowed eyes at the top of the rise on the other side. A head showed for a second and disappeared as dust blossomed around it.

"Duck," Larry whispered. He was smiling now. A smile of pleasure. The pistol in his hand barked loudly again.

Flame suddenly bit at his side and made him grunt with pain. Twisting about, he let loose a quick shot at the Jap who was behind him. There was a look of startled surprise in the yellow-brown face as the slug bit into him, then he toppled forward and rolled into the gully.

There was the sound of voices—Emily's and Crane's.

"Hey, Larry!"

"Quick!"

He turned and ran in their direction, even as the Japs debouched into the open. He had the advantage in that they couldn't fire as they came down the sides. There was a slight rise in the gully opening where Crane and the girl stood. So it was that he failed to see who stood a few feet behind them, until he was almost at their side.

And then he couldn't believe his eyes.

He had time for only a quick glance, then the stranger stepped forward in front of Larry's friends. He raised the odd-looking gun he carried and leveled it at the howling Japs.

Larry heard no sound and saw no flame or smoke come from the gun. But from the look of confounded astonishment, he knew something unpleasant had happened to the Japs.

He came to a panting stop beside his friends. Then he looked around . . . felt his mouth go slack. It couldn't be! There were no Japs behind him. There was only the rock strewn floor of the gully. Even the bodies of the Japs he had slain were no longer there.

As though the stranger knew the questions which lay in Larry's mind and did not want to answer them just then, he turned and said laconically, "Follow me."

Obediently they trudged after the stranger who headed directly for the cavern.

Crane shrugged thick shoulders as Larry asked, "Who is he?" with his eyes.

"Dunno," the cameraman said. "We got here and he steps out. I saw he was white. Couldn't figure out his fancy clothes. But he looks at us for a second and asks, "Kips?" I nod. You know the rest."

Emily nodded her head in corroboration of Crane's account. Then they were at the cavern mouth. Turning, the stranger beckoned for them to follow.

IT WAS cool inside. And not as dark as they imagined. The stranger seemed to know the place very well for he walked unhesitatingly ahead. They had gone forward for about a hundred yards when he held up a hand and said, "Hold."

They crowded close to him, in wonder. He was standing on the brink of a vast crevice. How deep it was Larry and his friends couldn't judge. They only saw that the grayish sides faded into blackness after a few yards.

The stranger smiled pleasantly, said "Follow me," and vanished over the side. The three looked at each other in bewilderment. Follow him—where? Oddly enough, it was the girl who first stepped to the edge and looked over. The stranger's upturned face was half a dozen feet below. Then she saw how it was done.

A ladder had been hammered into the rocks. Unhesitatingly, she too began the descent, Larry and Crane followed in turn. Larry counted a hundred and ten rungs before they reached their destination, a narrow ledge projecting over the black void like a pouting lower lip.

A small car stood at the edge. The stranger opened the door set flush in its side and motioned the three inside. Crane and Emily sat in the rear two seats, Larry at the stranger's side.

Their guide fiddled with several buttons on the dash and relaxed in the seat. Nothing happened. That is, nothing that Larry was conscious of. Then he looked through the front window and whistled in surprise! There had been no movement—no sound—yet they were now falling into this pit. He was quick to note that it was a controlled fall, for the walls remained equidistant from the vehicle.

"Don't be frightened," the stranger said reassuringly. "This will be over soon."

"Please," said Larry, speaking for the other two. "What's all this about? Who, are you? And where are we going?"

"My name is Burton. And we are

going to Lemuris," the other replied.

"Never heard of it," came Crane's voice. "You look more like Hollywood to me. . . . Say!" A thought had struck Crane. "That's it—Hollywood. Sure! That's why you got those fancy clothes. Flash Gordon serials or somethin'. . . . Naw," Crane concluded sadly, "I'm nuts. What'd they want to come out here on location for?"

"Really," Burton said, "It's not so mysterious. But explanations can wait until we arrive."

There had been blackness. And now there was light. Dazzling light. The interior of their strange air-car was mellow with it. Larry noticed that the windows were of some kind of glass that diffused the sun's rays.

"Holy smoke!" Crane suddenly bellowed. "Look—out there!"

Larry followed the pointing hand and understood Crane's exclamation. Other things became clear also. Where they were, for instance. The one glance he had of this strange world told him they were *inside* the earth.

For he saw the land masses below stretch upward in concave manner, as if they were looking down into some vast bowl.

THEIR little car had shot out several miles up above the mountain range which held their exit. Now their pilot pressed several buttons and the car nosed downward until it was within a few hundred feet of the highest peak. It leveled off then and flew straight ahead. Although Larry saw there was a steering apparatus, a crescent-shaped affair, Burton didn't touch it.

"Automatic control," he explained seeing the look of interest in Larry's eyes. "We are beamed for Lemuris now. We should be there in an hour."

"Should?" Larry asked, noting Burton had placed an accent on the word.

"Unless we're spotted by Kip patrol planes," their guide explained.

Larry decided to hold his peace until they arrived at their destination. He knew that there all their questions would be answered.

The land below looked very much like that which they knew. The mountains had given way to low foothills. The air-car followed the configuration of the topography. Now they were flying over a broad tree-carpeted valley. A river wound its way through the tree-studded plain.

Suddenly they were out over a vast body of water.

"The Pacific," Burton said. But he didn't look at them when he spoke. His eyes peered watchfully ahead. "Danger zone," he continued. "Past this, we are safe."

"Pacific Ocean; Kips—could be Nips; wingless and propellerless planes; a pilot who looks like something out of Buck Rogers and who speaks English like a Harvard man," mused Larry. "H'm. And we started out on a round-the-world flight. Didn't think we'd wind up flying around *inside* the world."

He had no doubt that what he saw below was the inside of the world. And that sun hanging in the center of this globe was just a huge blazing mass of gases. The same gases no doubt from which the rest of the planet came.

The pilot released a sigh and the tenseness left his face.

"We're all right now," he said. "See." He pointed to a dozen specks converging on them. "Ours."

Burton's one-word announcements only whetted their appetite for the solution to all this.

"Oh, man," Crane called, admiration deep in his voice, "look at those ba-

bies! Hardly call them *planes.*"

Larry had never seen such planes before. They looked like gigantic rain drops. Each plane contained a single man.

"Our fighters," Burton proudly announced.

"Fighters? But where are their guns?" Larry asked.

"Behind their ports. Watch!" he commanded.

The tiny projectile-like planes were in V formation heading nose-on for them. Suddenly the two lead ships parted and sweeping past them, each plane suddenly reversed its direction and flew parallel to them. The rest followed the leader's maneuver.

For the next hour the tiny fighters acted as convoys. Then, as abruptly as they arrived, they left. Larry blinked his eyes at the amazing speed of their departure.

"We are approaching Lemuris," Burton explained. "You can see the shore line out there."

THEY had been flying above the Pacific. Now Larry saw Lemuris, their goal. Towering spires reached slender fingers skyward. It was like New York, only a dozen times larger. He could see the spider web forms of great arches connecting the buildings.

Once over the city, Burton let the car settle until it hung suspended over a wide roadway. His passengers saw hundreds of cars such as theirs, traveling on the massive suspension bridge. Then they too were on it.

Now Burton used his steering apparatus. They traveled at break-neck speed toward one of the towering structures. He turned off onto a narrow roadway that skirted the building and pulled up before a wide door guarded by two soldiers armed with the same sort of gun he had used on the Japs.

They came to smart attention, when he stepped from the car and shepherded Larry, Crane and the girl through the doors.

Wide-eyed, they followed him. Never had they seen such immensity in any structure. Three Empire State buildings could have been put into it. Then Burton held a plain wooden door wide and was saying:

"Come in, please."

It was a simply furnished room into which they had been ushered. Facing them was a wide, massive desk.

Behind it sat a slender-bodied man dressed in something that resembled the togas of the ancient Romans. The predominant expressions in the man's face was a kindliness and graciousness which the onlooker felt as though it were a physical force. Then they came closer, within range of his eyes.

Never before had they seen a pair of eyes which held so much wisdom and goodness. They felt as though they were in the presence of a god. And the natural feeling of embarrassment they might have had at the ragged appearance they presented, did not mature.

He spoke, and they were as children, listening to the wisdom of an old, loved teacher.

"My son has told me of your misfortune." He lifted a hand yellow and fragile as old ivory in a gesture, stopping the question on Larry's lips. "And I beg of you to worry no longer. You are with friends."

He did not single any of them out with his glance, but those kindly old eyes missed nothing.

"Your wound will have immediate attention," he told Larry.

"Oh, it's nothing, sir," Larry protested. "Just a scratch."

Emily looked at the long bloody welt and involuntarily shuddered.

"Nevertheless," the old man contin-

ued, "it must have treatment. Quarters will be provided for your stay. Everything will be done to ensure a safe return to your outer world."

"*Outer* world," Emily faltered over the words.

"Yes, my child. I regret I do not have the time to go into details: that Burton will do. But when the time comes, you will be returned. And now, if you will excuse me?"

The interview was at an end. And, insofar as they were concerned, they were back where they started—in custody.

CHAPTER VI

BURTON became their constant companion: a condition Emily Hart seemed to enjoy. Larry couldn't blame her. Burton, by any standard, was a magnificent person.

His was a magnetic personality, as well as a physical attractiveness that was the envy of many a Lemurian. Further, the admiration was mutual. Larry felt unaccountable twinges of jealousy in the attention Burton paid the girl. He was unaware of the sidelong looks she gave him, when she saw the furrows gather in his forehead. At such times, she was doubly sweet to Burton.

The three Americans were Burton's guests. From the respect accorded Burton wherever they went, the two Earthmen realized he was a person of importance in this world.

When Larry's wound was taken care of, and the visitors had been clothed in the kind of garments worn in Lemuris, Larry could contain himself no longer.

"Burton," he said "tell us what all this is about. Who are you people? Where are we? This man you call the Master . . . how did he know of our arrival on Truk? I don't know about Crane and Miss Hart; but me—I'm batty from all this."

"Yes," Emily interposed. "How is it you speak English? And how——"

"Please!" Burton smiled. "One at a time. First, compose yourselves. . ."

He followed his own advice and sat back, relaxed, in his chair. His fingers formed a steeple. His features mirrored his sober mood.

"First," he began, "about us. All this vast city—Lemuris—was once on the outer world. Yes," he continued, seeing the shocked expressions on their faces, "we were once a proud and mighty people living on a vast continent above. How long no one knows But we do know that the earth above was still in a highly formative state. Vast, natural changes were constantly taking place. I won't go into that except to say that our continent sank into the earth. Sank for a distance of eighty miles. How it was that all who lived on Lemuris did not die, no one knows. But the Providence who——"

"I notice," Emily interrupted, "that you and others whom we've met believe in a God of some sort."

"And why not?" Burton asked. "Anyhow, they lived. The vast chasm, or fissure, closed behind them. And they found this strange new world. It was fortunate, indeed, that the men who ruled were wise men. They did not give way to despair or idle speculation."

He took a deep breath. Larry sighed and was unconscious of it. Crane had the look of a rapt child on his face.

"No," continued Burton, "they saw that the people became busy again at those tasks that had been theirs in the old world. Progress and enlightment came apace. Science thrived and we were happy people."

They all noticed that he had said *were*.

"So you see us at the height of our

civilization." There was a slightly drawn look to his features, as if he were troubled by something. "And now to answer your questions briefly. I speak English because it is the universal language. Why it occasions such surprise from you, I don't understand. If you will think of how it happens that you speak English you will understand how I do. The Master knew of your arrival because I had told him."

"You told him? When?" Larry demanded.

"In the auto-plane," Burton answered simply.

Then Larry remembered. During the trip, Burton had placed what looked like a radio operator's headpiece on his head. But there had been no mouthpiece attached to it.

"I remember now. But how did you *tell* him. There was no——"

"I *thought* out the message," was the startling reply.

"Oh."

Emily then asked the question they wanted most to have answered.

"How long do we stay here? And how do we get back to the earth? I hope there is another exit."

"There was another exit. But it no longer exists. A vast ocean flows over it. How long you will remain is problematical. You see"— he hesitated as if he disliked telling them this—"we are in a state of war."

"War?" burst simultaneously from three throats.

"Yes," Burton answered sadly. "Surprising, isn't it. And almost unbelievable too, when you see how peaceful Lemuris seems. How people go about their daily occupations as if bloodshed, terror and death never existed."

IT WAS true. They had been taken on a tour of Lemuris. And, just as Burton had said, they would never have known from the reactions of the populace, that a war was being fought.

"Hey, look, pal," Crane broke in. "We gotta get outa here! We just gotta!"

Burton's eyebrows went up.

"Sure!" continued Crane. "Those yella devils are plannin' ta bomb Pearl Harbor. And we gotta tip off Washington."

Larry had almost forgotten what Homatuki had shown them. But Crane hadn't. Now Larry, too, raised his voice in demand.

"Crane's right, Burton. Germany, one of the earth nations, has declared war on—well—on the rest of the world. Men like Crane and myself are going to be needed."

"Why?" Burton asked.

Larry was taken aback.

"What's the difference why?" he snapped in reply.

"Because we may be able to use you and Crane. And perhaps Miss Hart also."

"Well, so can our country. We'll probably be in it before long. And I guess a pilot like myself and a cameraman like Crane will find a place."

Burton stood up.

"Very well, if that is your wish, Upton. I will return you and your party to where I found you," he said.

"Why, you can't do that," Crane objected. "That ain't gonna——"

"Oh, be still. Both of you!" Emily put in. "You're both silly. What good will it do us to return to Truk? Burton is right. Let's hear him out."

"Thank you, Miss Hart. And now, gentlemen, let me give you a little of our history. So that you will have an understanding of why we are at war.

"As I said before, the fathers of our civilization were very wise men. They realized from the very beginning that all wars are destructive, retard progress,

set back the tide of civilization. And so they outlawed war. Peace reigned, nations prospered. Man knew only the brotherhood of equality.

"But on the far side of the Pacific a race of yellow-skinned dwarf men established a nation. They were the men of Kipangoo. They too were admitted into our Federation of States. And they too were given the benefits of our science and progress. Then, in a matter of what in your time would be a year ago, they struck us a treacherous blow.

"Far out in the Pacific Ocean there is an island administered over by Lemuris. A year ago the Kipangoos treacherously bombed and invaded this island. It was the first step in their avowed purpose of conquering all Lemuris.

"We were unprepared, almost powerless in the face of such well-planned treachery. For it had developed, as we found later, that the Kipangoos had been preparing for years for that moment."

"Holy smokes!" Again it was Crane. "That's just like the Nips and us. That's what they wanna do to us!"

"Wait a minute," Larry interjected. "Kips . . . That's what you called them, isn't it?"

Burton nodded.

"I begin to see the connection. Our Japanese and those Kipangoo's are related, right?" Larry asked thoughtfully.

"Right," came the answer. "Those Japanese, as you call them, are the remnants of what was left of the Kipangoos."

"Some remnants. Eighty millions of them."

Burton showed surprise at the figure.

"Anyway," Larry suggested, "let's get back to your troubles."

"Yes. As I said before, we were unprepared. And if it had not been for the Master, all would have been lost."

"Say! That reminds me. Who is the Master? And why do you call him that?" Larry asked.

"Briefly," Burton explained in his somewhat didactic manner, "the Master is the guardian of the Lemurians. It is an office to which he was elected and has held for forty years."

"Boy!" Crane ejaculated. "If Roosevelt hears about this!"

"Never mind the ape," Larry said noticing the puzzled look on Burton's face. "Go ahead."

"It was he who foresaw all this. And warned it would happen. But because of the Council of One Hundred, the representatives of the people, his warnings went unheeded. They could not understand. Nor can I, even now, blame them. Peace was in our hearts. Contentment in our minds.

"But the Master! Ah! He knew it would happen. Secretly he called together several of our scientists and prepared a plan of factory conversion which could be put to immediate effect. Some of the scientists were put at research into fields of armaments and chemistry.

"So that it was truly a short time after their attack that——"

THERE was an interruption then. An armed soldier appeared and whispered something to Burton. He arose and said:

"Excuse me, please. Something has come up and the Master has summoned me. Please make yourselves at ease until my return."

Emily said:

"What do you think, Larry?"

"Frankly, I'm all up in the air. I mean this sudden change in scenery and script, if you get what I mean?"

Crane laughed uproariously.

"Say!" he explained, "I'll bet Flynn'd give a million bucks to film this."

"Seriously, though," Emily asked again, "what do you think?"

"Think?" repeated Larry. "That's a silly question. What's there to think about? We're stuck here. And there's nothing we can do about it. And to tell you the truth, I don't mind that one bit."

"How come?"

"Well, for example, did you notice these buildings?"

"Yes, of course I did," she answered somewhat bitingly. "They do sort of hit you in the eye."

"Now isn't that just like a woman?" Larry asked of no one in particular. "Ask a civil question and get some smart remark like that for an answer."

"Aw, come on, hot-shot," Crane said sourly. "Never mind that stuff. What're you drivin' at?"

"Look, ape," Larry's temper flared, "I can take that talk from her. But ——"

"Off again," the girl said wearily.

That took the edge off. Larry and Crane mumbled apologies and Larry continued.

"All right. The buildings. Looks like they're made of solid concrete. But do you know what that stuff is? Plastics! They call it synthetics, but what's the difference? And look at this room. No windows. Yet the air in here is clean and fresh as outdoors. And the room temperature—perfect."

"So okay, chum. But what're you drivin' at?" Crane had a one-track mind.

"Just this. These people have built the kind of life we would like to have. And I, for one, am going to do my bit to help them. Although I can't figure out how."

"You know, hot-shot, them's my sentiments too. I'm with you on that."

"And you can count me in too," the girl said.

BURTON returned just then, to bring their talk to a temporary halt. One look at his tight-lipped mouth and troubled eyes and they knew something was wrong. There was.

"Bad news," Burton announced. "The Kips have broken through our outer line of defense!"

"Yes? Just what does that mean?" Larry was again the spokesman.

"Why, I don't know, yet. But it could be serious."

"Um h'm. I suppose your army has several lines of defense, though."

"Army? We have no army."

"No army! What the hell kind of a war is this you're fighting?"

"I'd better explain, Upton. I see you don't understand. There is no need of armies; they'd be of no avail. You see, most of Lemuris is uninhabited. Deep jungle swamps, great areas of desert and greater areas of still-melting rock."

The three stood open-mouthed, uncomprehending. No army, no battlefields. Then how was this war fought?

"Furthermore," Burton continued, "to maintain an army, we would have to notify the public that we are at war! And, of course, we can't do that."

Larry was stunned. Here was a country fighting for its existence and the people didn't know about it.

"Wait a minute," he said slowly. "I thought you said the *country* was at war?"

"I did. But not the people in it."

"Then who's doing the defending?"

"A group of highly trained men."

"I see. Swell! A *group*. Probably fifty guys or so. And the people, the dopes, don't know anything about

what's going on."

Burton flushed at the savage tone of Larry's condemnation.

"Can't you see?" he defended his position. "We can't tell them."

"No? Why?"

"They've never known any other condition but peace."

"Nuts!" Larry cut in. "Did you ever ask yourselves *why* you're fighting? For what? You remind me of some of the fatheads back home."

"Well spoken, my friend," a voice said.

They turned. The man called the Master had entered the room. He joined them and continued:

"Give us your idea, my friend. Perhaps it will solve our problem."

"Well—" Larry hesitated, now that the turn of the card was up to him. "Suppose you give me an idea of the lay of the land."

Burton looked puzzled, but the old man understood.

"Very well. The land lies thusly. Two million Kipangoos have elected to make war against the remaining twelve million people of our Federation. Of our number, six million live here in Lemuris.

"Defending Lemuris is the *group* Burton mentioned, forty thousand men, trained specialists all. Opposing is a probable half-million men, almost the entire male population of Kipangoo."

"Nice odds," Larry commented.

"Not too great," said the Master surprisingly. "You see, they have never made any contributions to our sciences. Always the imitators, they have copied our weapons. But because of the sheer weight—"

"Excuse me, sir." Larry's tone was deferential. "You've forgotten one thing: the human element. Their entire nation is out to win. And that, sir, means everything."

THE kindly eyes of the old man flashed a speculative look at Larry, as though his words had struck a responsive chord.

"And what would you do?"

"*Let the people know!* Tell them! Why, how, and what they may have to face. And I'll bet if they've got anything on the ball, this war'll be over in a hurry."

"Perhaps you are right. At any rate I am going to do just that. Tell the people. It will, of course, come as a shock. But I think I can vouch for the response. Are there any other questions, my son?"

"No sir. If there are, Burton can answer them."

"Very well. And by the way——"

"Yes sir?"

"—Burton is my chief assistant. Do not underestimate his ability."

Burton flushed at the unexpected commendation. Larry was somewhat startled. Burton didn't have the qualities which would make for a capable second in command. But Burton's next words bore out a little of what the old man had meant.

"Well, Upton, that solves that problem. Now I'll give you a rough idea of the situation. Since warfare here is not fought on the ground, it is perhaps different from what you may know of."

"Sure it is. Just how are the battles fought?"

"They're not. That is, strictly speaking. Completely encircling Lemuris, at heights varying from four thousand to forty thousand feet, are stationary bastions, anchored in the sky. Their groupings depend upon the area of defense. So that close to Lemuris, they form a rather heavy screen."

"Whoa, brother, slow up a little. What sort of things are these bastions? What are they made of?"

Burton laughed in apology.

"Sorry. Well, let me see. . . . You recall the air car we took from the outer earth?"

"Yes."

"Well, those bastions are tremendous air cars, held immobile at those levels. They have terrific fire power. And a single man can operate one of them."

They were impressed by the picture Burton had drawn.

"How come they flopped then?" Crane asked.

Burton's shrug was eloquent.

"The Kipangoo's delegated squadrons of their air fighters to commit suicide by driving their fighters directly into the fortresses. You see, a fighter car is very small and although the forts shot down several hundred, enough got through to accomplish what they had set out to do."

"Look like these Kips and our Japs have the same idea," Emily said.

They looked curiously at her.

"Remember what Homatuki said that night at dinner? 'Men and material are expendable.'" she explained.

"You're right! And they'll keep plugging away until they wear 'em down. Look, Burton, I have an idea. Want to hear it?"

"Go ahead."

"On one of our tours through Lemuris, I saw men building those air cars. And I noticed—man, if Henry Ford ever finds out about this—that it's all done in a single operation."

"Yes?"

"Why not make big ones. Like those stationary forts. And fill 'em with troops. *And invade Kipangoo!* I'll bet those guys are like the Japs. Pattern thinkers! Formula followers! Give them the unexpected and they're sunk. Their plan is based on one idea: that you people will never take the offensive. And that's where you fool 'em!"

"Jeez!" Crane burst out. "You're a genius, hot-shot! That's usin' the old bean."

Even Burton seemed excited by the idea. Then the girl threw a verbal monkey wrench into their plans.

"It's a swell idea. But where are you going to get the men? Burton said a while ago that there were only forty thousand in that group."

"Do you know how long it took to train those men, Miss Hart? Three weeks! It won't take any longer to train half a million. Upton, I want to thank you for that brilliant thought!"

CHAPTER VII

THE next three weeks were the busiest the Americans had ever known. The people's reaction to their Guardian's announcement that their country was at war, was a spontaneous and whole-hearted demand for active participation against the enemy. Burton's call for volunteers was more than answered. According to the strategy devised by the Lemurian, no more than two hundred thousand men would be needed for the expedition. A million volunteered.

It was truly amazing, the speed and thoroughness of their training. In a matter of weeks they were ready. As were the huge carriers for this supreme adventure.

It was a period of training and instruction for the three from the outer world also. Strangely, in some things it was Crane who showed the greatest adaptability. Perhaps it was the years he had spent with cameras. Whatever it was, he committed the most complex topographical maps to memory. Even Burton marveled at the ease of his accomplishment.

Because Larry and Emily had to

learn how to fly the air cars, they were thrown together a great deal. They discovered mutual tastes. And discovered, too, certain traits they hadn't noticed before.

"You know, glamour-boy," she said one day, "I didn't know there was a brain behind that beautiful face of yours."

He was at the controls of the car. He grinned at her words and replied: "What is this—a build-up for a let-down?"

"No," she returned seriously, "I guess I've done you wrong. You're a pretty regular guy, Larry. And I admire you for what you're doing here."

"Aw shucks." He started to kid her. Then, seeing that she was serious, he became serious also. "Look baby, I'm no talker. Never was. And I don't go in for the spotlight glow. What I told that wonderful old man they call the Master, came from the heart. I'd feel that way if something like that happened back there where we came from. And some day it may. We just can't sit back and take it. We've got to dish it out too. And let me tell you something else—hey! What was that for?"

He looked at her, wide eyed. In the midst of their talk, she had suddenly reached over and kissed him.

"Why—why—well, can't a girl feel like kissing a man?" she answered.

"Honey," he said smiling, "that's one investment that's going to bring a return with interest."

The car did several things not in the book, as his hands left the controls to take her in their grip. Their new-found emotion was bright in their faces when they landed. Crane took one look and broke into a joyous shout:

"Well, damn me! They're in love."

THERE was little time, they soon discovered, to capitalize on their love. Few opportunities presented themselves for their indulgence. Larry discovered that Burton had important tasks in mind for him. How important he didn't know until he was unexpectedly summoned to the Master's office.

Two others were there, besides the old man—Burton and a man named Farnsworth.

"Well, Upton. This is it. The moment we've worked toward all this time," Burton announced.

Larry's pulses leaped.

"Yes," the Master said in his gentle voice, "the time has come to join battle with the enemy. We are in the right and Providence is on our side. I have complete faith in our eventual victory."

It was like a benediction.

Then Burton told of the plan he had conceived. Larry's respect for the man went up several notches. As Burton planned it, there would be a three-pronged assault on the citadel of Kipangoo.

All the while he spoke, he used a blunt-tipped finger as a pointer on the large map spread across one wall of the room.

"Here"—he pointed to a green area —"is Kipangoo. As you see, it is a semi-mountainous country. Now, I, using the main force of one hundred transports and one thousand fighting craft, will attack here." He pointed to a spot on the map. Larry looked closely and saw it was on a broad slope that extended in a gradual grade to the tableland of Kipangoo.

"We will have the tactical advantage of surprise," Burton went on. "At best, a slight advantage, for their patrol cars will spot us. But our fighters should cover our advance. It will only be the natural thing for them to assume that this will be the main and only attack.

"There is where we truly will surprise them. For you, Farnsworth, and you, Upton, will then follow through with our plan.

"Here, you see"—the finger pointed a light blue area below the brown representing Kipangoo—"how the battle should be joined. The Pacific is one boundary; and on two sides, Kipangoo is supposedly immune from attack because of the mountains and jungle. Only where our main forces land, is the land favorable to us. But"—he paused dramatically—"we must assume that they have taken our move into account and have prepared for it."

"Yeah?" Larry interrupted. "How do you figure that? I thought, to quote you, that there wouldn't be any land battles."

"If I did, I didn't mean quite that," Burton explained. "We must take under consideration that they have foreseen a possible invasion and prepared for it. But only on that side. They know they are quite safe from the seaward side. Then here is what we expect. Their forces engage ours. Reinforcements will come to the defenders' aid. As the tempo of the battle mounts, and more and more reserves will be thrown into the attack, until the city will have a minimum of defense. Then *your* forces will strike . . . *from the air!*"

Larry grinned exultantly. What a battle that was going to be! Farnsworth coming in on one flank, he, on the other. And all with air-borne troops. An invasion from the sky, literally. And the men in his command were ready and anxious for it to begin.

Burton turned away from the map.

"Farnsworth, you know where and how to proceed. Upton, I have already given Crane, who is to act as guide, his instructions. Now gentlemen, you will proceed to your stations and await flying orders. The next time I expect to see you will be in the council chambers of the city of Kipangoo. Good luck and good hunting."

CHAPTER VIII

LARRY looked out through the control room window. The green undulations of land, five hundred feet below was forest—thick, impenetrable. Crane leaned across a desk, intent on several maps. His homely face was screwed up in abstract concentration. He was carrying an unexpected burden of responsibility. The entire success or failure if the initial phase of the operation depended on him. For it was he who had to recognize, from the air, that small strip of ground which would be their landing field.

His brow was furrowed and when he turned away from the desk and joined Larry at the window, it was as if Larry were not as his side. He began to talk, half to himself and half to Larry:

"Funny thing, hot-shot. Back there"—it was a favorite phrase of his, meaning the outer earth— "if something like this'd happen . . . well, it'd be different. You know what I mean? Gettin' up in the cold dawn, planes warmin' up, big things in the air. But this—aarh! No dawn, just that sun blazin' up there. No clouds, no night and day. Looks like *time* stands still out here. Time and people." He sighed and Larry looked at him in surprise. It had never occurred to him that Crane was capable of thought. Or that that gorilla shape could hold emotions other than anger and hunger.

"Look! There's ten thousand of us goin' out. I'm not kidding myself. It's kill or be killed. An' I'm a little scared. But these guys. Hell! They act like they're goin' to a movie."

"Wait, pal," Larry broke in. His hand reached up and gripped Crane's

shoulder in friendship. "I think they know what's ahead. Maybe it's their way of showing courage."

"Nah! I know different! You see, while you were busy with Burton, I spent a lot of time with these people. And I wanna tell you somethin'. At first, I thought this was heaven. I don't know whether you know it or not but nobody works in Lemuris. Nobody worries about time or money or the thousand and one things we do. Sounds wonderful, don't it?"

"Go on, Philosopher Crane," Larry urged, interested in spite of himself.

"Well," Crane continued, "maybe I'm old-fashioned. I like to know what I got. Now these guys, they're going out ta licks the Kips. Swell! So they do. And what do they came back to? A newer, brighter world? Nope. Everything's just dandy in his perfect place. Nobody has to git up and git. It's already got."

"What are you trying to tell me? War is wonderful? And necessary?"

"Naw! You got me wrong. I'm only tryin' to say war don't mean to them what it'd mean to us."

"And I think you're wrong. War means the same to every——"

"Excuse me, sir." It was the pilot.

"Yes?"

"Objective reached, sir."

Crane peered from the window. The pilot was right. There, a few hundred feet below, was the bald spot in the green forest that was to be their landing field. He knew that it was a large enough area to accommodate the ten transports which comprised their forces. Quickly, before Larry gave the order to land, he brought the entire area into his mind and formed a picture which was whole and complete.

The huge transports landed like gigantic, graceful birds, lightly and silently. The landing ramps were lowered and in a matter of minutes two thousand men lined up for their last inspection. Group commanders busied themselves seeing to it that equipment was ready. Then, at a given order from Larry, they marched off. Only sappers remained.

The last man disappeared into the jungle. Suddenly there were the earth-shaking sounds of five great explosions. The sappers' work was done. Nothing but dust remained of the transports. There was to be no turning back for Larry and his men.

UP AHEAD, through brush thicker than anything Larry had ever imagined, picked squads of men hacked a way for the rest. One trail for each column, until they reached the precipitate side of their final objectives.

The men were attired alike. Close-fitting shirts and breeches made of a tough, resilient material, gave them protection against thorns and roots. Strangely, the jungle was free of all life, insect or animal. But the heat was intense. Yet despite the heat they were comparatively cool.

"The cloth: they treat it some way," Crane explained, as he trudged at Larry's side.

Larry was more and more surprised by the wealth of information Crane had acquired. And once, when Larry mentioned the emptiness of the jungle, Crane again supplied the answer.

"That was the guy they called the Master. Long ago, he had a little war of his own against bugs and snakes and things. He won that one. That's why there ain't none, thank God!"

Odd bits of information. For example, the rifles they carried. Crane told Larry how they came to be:

"Only kind of guns they had were like the Kips got. Regular rifles, shootin' bullets, like we got back there. But

the Master—" Larry became conscious of the note of awe in Crane's voice and remembered now that it was always present when Crane spoke of the old man—"what a genius! He saw that we'd need somethin' different. So he has some of the smart brains think up these heaters. Remember what happened to those Jap-rats back on Truk?"

"Will I ever forget! But why are they called anti-personnel weapons?"

"Don't work on metal or plastics or stone. Just flesh. Some kind of energy. Guys just turn to dust. Poof—gone!"

How long it took to get through the jungle was always a mystery to them. Three times they slept. It was the only means they had of telling time. Larry's wrist watch had corroded from salt water. He wore it only as an ornament. A sort of reminder that there was in existence a world to which he hopped to return some day.

They had been clean, almost dapper-looking, when they had first landed. Now, as the men assembled in wearied groups, there was a vast difference in their appearance. The jungle had been conquered. Only the precipice remained.

This time Larry made a personal inspection tour of the men before giving the order for the final assault. He looked no different than the lowliest volunteer. Dirty, bedraggled and red-eyed he paced past the long lines of men. His lower face was hidden by a tangled growth of beard.

Before them stretched the almost perpendicular reaches of the mountain. Thick slivers of granite, hundreds of feet high, studded the cliff-like face, making their climb even more hazardous.

Satisfied at last, Larry faced his men and gave the command:

"Climb-leaders, step forward!"

A hundred men stepped out of the close-grouped ranks. Fifty-foot lengths of rope were coiled about their chests. Curiously shaped grappling irons hung suspended from the waist-bands of their trousers. These were the men whose duty it was to ascend first, finding the foot- and hand-holds, securing the irons and letting out the rope to be used as ladders. They were specially chosen for this, the most dangerous, part of the mission.

"All right, men," Larry announced in a ringing, confident voice, "there it is. We're depending on you to get us over. Let's go!"

There were no cheers. No chins were thrust forward in determination. Just a calm acceptance of danger. And a sober willingness to face it.

At a hundred different points, they started to climb. There was never less than ten feet between each leader. They were like a thousand flies, creeping over rock.

THE first few hundred yards were easily traversed. Then Larry's leader came upon the first overhang of rock. He signaled to Larry, directly behind, to hold his group ready. Then he threw his iron hook up over the lip of the overhang. Carefully he pulled on the rope. And the hook sailed out into space to strike twenty feet below. Pulling it back, he cast again. And once more, before it gripped. Then he began the ascent, hand over hand, on the rope. Every man held his breath. Every eye watched with keen anxiety—until at last the leader disappeared over the lip.

"Wow!" Crane whispered softly. "What a stunt man he'd make."

"Right. And don't forget, ape, you've got to do that too," Larry whispered to him.

A groan was the answer.

Then the rope came snaking down

to hang within Larry's reach. Unhesitatingly he took hold and began the climb. It was back-breaking work. He looked back once. But the vision of needle sharp rocks below, reaching like sharks' teeth for prey, spurred him on. He did not look down again.

The rope became taut. Crane had started to climb. One by one the twenty men in their group followed. And when they reached the leader and Larry, it was to find them inspecting the next obstacle, a chasm thirty feet wide.

There was no way around it. The sides of the abyss stared them in the face like parentheses, with smooth-sided walls for boundaries.

"What now?" Larry asked.

Carefully the leader inspected the containing walls. They were smooth as glass. At the far edge of the chasm, an outcropping of rock stuck up like a thick fence post. Disengaging the hook, the leader made a loop in one end of the rope. Whirling it above his head, he cast it out across the void. It settled over the rock, like a homing pigeon coming in to its roost. In a moment the rope became a slender cable stretching over the chasm. But there was nothing to which the other end could be secured.

"Look's like the end of the line," Crane commented on the impasse. He spoke too soon, however. The leader did something then, that would burn in Larry's mind forever. Passing the rope under his armpits, he secured it around his chest. Then he walked back to the edge of the overhang and lowered himself until he hung suspended in air. The rope was now truly a cable.

One by one the twenty-two men crossed the crevice. As the last one came to a panting, gasping halt on the opposite side, Larry hailed the human anchor.. It was with a sigh of relief that they saw him appear. But how was he to get across?

Motioning for them to disengage the rope, he pulled it in and coiled it around his chest. Then he withdrew a pair of odd-looking objects from his pocket and slipped them over the soft material of his shoes. Then he did something that made every watcher gasp in amazement. He began to scale the smooth side of the wall!

Inch by inch he crawled over the surface. They saw his hands reach for, and find, tiny crevices for his fingers. And they saw now what he had put on his feet. Suction cups! Larry lived over every second of that frightful journey with the leader. And at the end, he was as exhausted as if *he* had made the crossing.

They rested then, until the leader could regain his strength.

"Jeez," said Crane, as they sat on the ground and chewed the tablets which contained some sort of stimulant. "I'm sure glad the girl isn't with us. How come she didn't raise a stink about havin' to stay back there?"

"She did," Larry answered, smiling in remembrance. "But when the Master *suggested* she remain, she saw it wouldn't have done any good to argue."

"It'd be like arguin' with God, wouldn't it?"

Larry turned startled eyes in Crane's direction. He had never thought of it that way. Now it almost made sense. It *was* a little like that. But there wasn't time for soul-searchings or speculations. Already the men were rising to their feet, stretching cramped and aching muscles.

Once again they were on the move. This time over comparatively smooth ground.

It didn't last long however. A few hundred yards and they faced another escarpment.

LARRY held a brief consultation with the leader and Crane.

"Yep," Crane said, casting a weather eye upward, "this is the last step. 'Bout half a mile of this, then it'll be smooth sailing to the top."

They were on a narrow mesa-like shelf, almost a hundred yards wide. Larry had a clear view to either side of the mountain. On all sides, above and below, men clung to, or slowly moved over, the vast face of the mountain. Human flies groping for sanctuary. And some never found it.

Once a leader lost his balance and fell. And twenty men fell with him. Bouncing from rock to rock, like rubber balls, until their lifeless bodies came to a final resting place at the bottom. Again and again the others saw men lose their grips and go sailing into space.

"Jeez," Crane mumbled in a sick voice, "what a way to die!"

"And you," Larry reminded him gently, "had no faith in these men because they showed no emotion. I guess what they feel is planted so deep in them that there's no need to show it."

Crane nodded solemnly. He felt proud, suddenly, that he was one of them. Felt, too, the responsibility that rested on his shoulders.

"Let's go, pal," he said softly. "We got a date with some rats."

They went upward again. Upward until the muscles in their necks ached with unending torture. Until their fingers became raw and bloody from the shards of granite they encountered. Until the bones, sinews, tendons and nerves in all their bodies screamed a protest of each foot of the never-ending climb. Until the leader, stood, at last, on the topmost peak and pulled Larry up beside him.

They should have collapsed on the ground. Fallen and never risen again. Nor would Larry have blamed them. They had done the impossible. Scaled the unscalable. But these were not ordinary men, he realized. These were men fighting for a way of life that was dear to them. So dear that death held no terrors for them.

Larry's was the first group to reach the mountain top. The others joined them. Some came intact—leader and twenty men, others were only the remains of their unit—and last came the stragglers and the lone men who had escaped when the rest plunged to their deaths.

Quickly, group commanders called the roll. Two hundred and eighty men had been lost. Larry wished he could call a halt: give them a breathing spell. But they were fighting against time. Every moment counted. A junction had to be made with Farnsworth.

Silently he turned and took the first step toward Kipangoo. He could see it in the near distance, a black bolt in the brilliant light. The designers of the city had—almost deliberately, it seemed—constructed the city of some black material. As if the blackness signified the evil that rooted within its walls.

He knew that they would enter a thinly wooded area, a mile from the city. The forest ended abruptly a hundred yards from the outskirts. Those hundred yards were the most dangerous of all. For once they were past the forest edge, it was all open ground and uphill.

What he failed to see was the narrowed slanting eyes which watched the ranks form and begin to march forward. The owners of those eyes were well hidden by the trees.

Then the sheltering trees sheltered nothing. But a form stole away, running at full speed, to report what it had seen.

THERE was no need for Larry to give last-minute instructions. The men knew their duties. And the group commanders knew theirs. The forest swallowed them up.

The knee-high grass at the edge of the forest swayed, as if stirred by a breeze. Then a figure, clad in what was once green cloth, now stained brown, arose and ran forward a half-dozen paces to flop into the grass again. Another figure arose and went through the same maneuver. The grass became alive with creeping, crawling, rising and falling men.

Ten yards — twenty — fifty — sixty yards they advanced. Then there were but twenty more yards to go. Larry thrust his head above the grass cover. Beyond the shacks he could see a broad street leading up to the center of the town. Unlike Lemuris, Kipangoo could boast of rich and poor. It was evident they had approached the slum section of the city. Confronting his eyes were a score of wooden hovels, all leaning at crazy angles and all looking as if a breeze would send them tumbling to the ground. In Lemuris the buildings were awe-inspiring and breath taking in their beauty. Their multi-colored spires reached sunward as if in prayer. In Kipangoo, the architecture was altogether different. The buildings were squat-bodied, one-storied affairs, huddled together wall to wall.

A body pressed close to his. Crane's hoarse whisper, "Look. The joint we gotta knock off," told him that the four-storied, square-shaped building that was the hub of the city was also the council chamber, the seat of government.

But Larry's mind was intent on something else.

"I don't like it," he said abruptly. "It looks too peaceful. Look! There isn't a person to be seen."

"Maybe they're havin' lunch."

"That's what I'm afraid of. That they're going to have *us* for lunch. Keep your fingers crossed, ape, because here we go."

With those words, he rose to his feet and started at a run for the line of shacks. It was the signal for the assault. Immediately every man had risen and followed. They didn't get far.

The line of shacks erupted into a fury of sound and fire. Larry and his men had walked into an ambush!

Whirling quickly, Larry screamed, "Sappers up!" and dropped to his knees. The short-barreled rifle was at his shoulder. There was no sound, no fire, no smoke, as he pressed the trigger. He couldn't even tell whether his fire had any effect. But he aimed at the gun flashes in the windows of the hut nearest him.

Anger boiled in Larry. They had been seen. And led to the slaughter like lambs. He knew that losses had been heavy at the first volley. Men had dropped like ten pins on a bowling alley. Somewhere to his left a man was screaming, like an animal in pain. The screams were being echoed all over the field. He felt thankful that the dead could not scream.

He became aware of men gathering around him. A voice said, "Here, sir."

He swiveled his head around. Twenty men lay pressed close to the earth nearby. Suspended from the waistband of each were two bags. They were the sappers he had called up. There were ten grenades in each bag. There had been fifty of these sappers at the start. The mountain had taken heavy toll of them.

"Clear a path for us, men," he ordered. "We're going down this street!"

In a matter of seconds they were on their way. He couldn't see them. But

he knew they were worming their way closer to the huts. Close enough so their precious grenades would work.

THEN there were a dozen thunderous explosions. He had not seen the men fling the grenades. But each had selected a target and heaved his deadly missile. Smoke, dirt and Kips erupted from the spot where the explosives had landed. The way had been cleared.

A cheer swept the field. Again Larry started off, Crane at his side. This time they gained the broad width of the street before meeting opposition. And again the sappers had to called in. Each house sheltered a sniper. Each roof top was a barricade. The fire was murderous.

Here, a man clutched his throat as though he could stop his life's blood from leaving that way. There, another ran woodenly forward, only to fall flat on his face. Another dropped his gun and sat down, holding his middle with both hands, while the red blood seeped between the gripping fingers.

Larry saw all this, yet did not see it. They were pictures in his mind. Unforgettable and unbearable. But he was their commander. He could not stop to console. He had to lead them out of this nightmare.

"Stay out of the street," he shouted, and set the example by running to the shelter of the houses. "Sappers up!" he called again.

Again the earth-shaking roar of high explosives. Now the Lemurians moved through the streets like grim avengers. It was like magic. A group of men charged out of a blazing building. Short, thick-bodied men, dressed in gaudy clothing. They came out screaming. Larry saw them for an instant. Then they were gone, vanished, as if they had suddenly evaporated.

The battle developed a new phase. The Kips, as though realizing they were fighting a losing battle, threw caution to the winds. They came from the shelter of the houses. They dropped from the roof tops. Seeking to kill or to be killed.

Four leaped directly in the path of Larry and Crane. And for the first time he saw them up close. Evil-looking men with maddened faces, lusting to kill. Now it was a personal matter. This wasn't something you shot at a distance.

Each of the Kips was armed with a wicked-looking curved knife. And Larry stepped to meet them. Crane giggled, unaccountably. Larry always remembered that giggle. There's nothing funny in killing a man, he thought. For Crane had brought the heavy stock of the rifle down across a Kip's skull. The skull split open as if a cleaver had been attached to the rifle. That was when Crane had giggled.

THEN Larry went a little mad too. The two Kips had started to circle him. Suddenly he leaped toward one, whirled and, swinging his riflle like a baseball bat, struck the other Kip across the throat. There was a cracking sound and the Kip's head sank at a ludicrous angle before he fell to the ground. But in that second the other Kip struck. Larry didn't know he'd been struck. There was no pain. He only felt the sharp steel lick lightly across his chest. Then the Kip was in his arms. Forgotten was the rifle or the knife at his side. Larry wanted only to kill the man with his bare hands.

His fingers clamped themselves about the muscular brown throat. Lifting the Kip in the air, he swung him down and inward between his legs. His knees scissored the Kip's waist, holding him taut. Then Larry proceeded to strangle the man.

Tighter and tighter Larry drew his fingers together. The Kip's face became dark with congested blood, his eyes protruded horribly and his lips opened showing a thick purplish tongue.

Larry was smiling, although he didn't know it. Nor did he hear the animal sounds that came from his throat. He knew only that it was good to kill. To kill these beasts until not a single one remained alive.

The Kip's hands made futile, clawing movements. And as life was squeezed from the brown throat, those hands became supplicating things, caressing in their motion across Larry's body. The hands slid down across his sides to his waist. Larry didn't feel them. All his senses were bound up in the kill so that he didn't feel the man's fingers close around the knife haft and draw the blade from its scabbard.

Suddenly, the Kip's body arched backward—his right hand flew back—then down, the knife plunging straight for Larry's throat.

Three things happened simultaneously: The Kip's body went rigid for a second, then collapsed in death. A shining arc of light flashed across Larry's vision and something struck him a blow in the chest.

Larry released his grip. The body fell away and Larry looked down to see what had struck him. Lying at his feet was a man's hand, severed at the wrist. Within the still clenched fingers was a knife . . . Larry's!

He turned startled, bewildered eyes to the man standing beside him. It was the group leader—the mountain climber. He was wiping blood from his knife, across his trousers.

Then Larry realized what had happened. This man had come up in time to see the Kip draw Larry's knife. And had stuck, even as the Kip had struck. Only quicker.

Reaction set in for Larry, now that the immediate excitement was over. Dazedly he looked about him. The street was a shambles. Bodies lay everywhere, mostly Lemurians. The gutters literally ran red. But what effected him most was the silence. Gone was the gunfire, the sound of grenades bursting, the hoarse shouts of men locked in mortal struggle. Not even the sound of the wounded.

A red mist swam before Larry's eyes. He staggered and two pair of arms held him erect. His head fell forward, chin striking his chest. Then he saw his blood-soaked shirt. Crane noticed it at the same time.

"Hey, kid! You been hit!"

Then Crane's big hands were tearing at the cloth, ripping it away to expose a long knife gash on his friend's chest. Blood welled slowly over the raw edges of the wound. But Crane saw that it was only a flesh wound, painful but not serious.

Larry's weakness passed almost as quickly as it had come.

"What happened?" he asked of the man who had saved his life.

"They lost their desire for battle, I'd say," the other answered smiling.

"You know all the group commanders, don't you?" Larry asked.

"Yes sir."

"Find them and have them assemble the men again. Maybe this battle isn't over yet."

LARRY almost groaned aloud when he saw what was left of his force. Of the two thousand men who had started out, not more than six hundred remained. And some of these were wounded. But on every face was the same expression. A do or die determination.

Almost lightly Larry gave his final command.

"Well, gang, they haven't stopped us yet. So what do you say? Might as well finish what we started."

There were no cheers. They were too tired—too worn. But there was no hesitation as they formed ranks and, with Larry in the lead, started off again. This time there was to be no running to the protecting walls of buildings. As Crane put it:

"The hell with 'em! We can take it and we can dish it!"

The street stretched out before them silent, deserted yet holding threat.

An remembered stanza popped into Larry's mind as he marched along.

"Into the valley of death,
Rode the six hundred.
Cannon to right of them.
Cannon to left of them.
Volleyed and thundered."

He didn't know whether those were the exact words. But he thought how apropos that stanza was. These too were six hundred. There were no cannons nor did they ride. But theirs was also a journey through a valley of death.

The blood had coagulated on Larry's wound. But the pain remained. Every step was torture. It was as though pain didn't exist, so erect did he march. He could not be any less the man than those he led. For he knew what they had been through. Knew now, how hopeless it had all been from the very beginning. Six hundred against how many thousand? He didn't know. But he did know there would be many less Kips before these men were through fighting.

The silence, the lack of opposition began to worry him. The council hall, their ultimate goal, was only a short distance off. Already he was in the wide road which encircled the hall. He saw that the hall was the center of the city, for radiating from it like the spokes of a wheel, were the streets of Kipangoo.

"On the double, men," he called, starting off at a trot.

They were halfway across, when the final attack came. Thousands of Kips debouched from every street. More thousands came running from behind the hall. In a matter of seconds they were completely surrounded. A hail of death was sent into the marching Lemurians.

As if they were performing a drill maneuver on the parade ground, the Lemurians formed a square, each side facing the enemy. The first line of each side lay flat upon the ground. The second was on bended knee and the third stood erect. Within the square was the reserve.

Each man fired at will. And the devastation they wrought was terrific. The Kips were like drops of dew in a hot sun. They simply disappeared. Literally.

Those who escaped the Lemurian fire turned and ran for the nearest shelter. And once again the streets were deserted.

In all the hail of leaden death directed at them, Larry was surprised to see even one of his men escape. A dozen times death had fanned his cheek. Each time, however, it had sought another. One glance told Larry that at least one fourth of his men had been killed.

"Did it again, eh, pal?" a voice said. Or rather mumbled.

Larry turned to see Crane swaying drunkenly on his feet. He was a gory mess from one shoulder to his knees. Larry put his arm around the cameraman and held him erect.

"Hurt bad, pal?"

"Naw! Can't knock off an old wreck like me," Crane mumbled in reply.

BUT Crane was hurt, bad. Larry saw the perforations. Three of them. One through the shoulder, one through the thigh. Another bullet had creased his side. The wounds themselves were not serious. But the resultant loss of blood was.

"All right, ape," Larry said gently. "Lie down now. And stay put."

"Might as well," the other mumbled. "Looks like the end of—car—line." His voice trailed off at the end.

"Guess you're right," Larry whispered to himself. The retreating Kips had disappeared into the buildings fronting the plaza. Their presence soon became felt. Hidden as they were, safe from the anti-personnel rifles, they sprayed the Lemurians with a withering fire. It was an entirely hopeless situation.

Larry knew it was only a matter of time, and not very much of that, before they would be wiped out. He looked about, searching for a weak spot, some avenue of escape. He looked . . . and could not believe what his eyes told him.

An entire row of buildings disappeared under his gaze. He whirled about in time to see the huge council hall do a fade-out. Some one shouted, "Look!" and pointed upward.

A hundred planes circled lazily overhead. Lemurian planes. Burton had arrived in the nick of time. One by one the planes landed in the area cleared by their guns. From the first plane, two figures leaped and ran side by side toward them. It was Emily and Burton.

EMILY HART sat beside Larry Upton on the narrow sofa. Behind them, stood Crane, his wide-lipped mouth agrin. Seated across from them was the old man whom the Lemurians called the Master. Burton stood beside him.

The Master had just explained how Farnsworth had been ambushed and how his entire force had been destroyed. And how the Kips had thought Larry's force was the advance guard of the main invasion group.

"But sir," Larry interrupted. "What about those energy guns on Burton's planes?"

There was sadness in the Master's voice, as he explained.

"Their manufacture was completed just after your departure. It took a little time to install them. Had we been quicker——"

The rest of them knew what he meant. A lot of lives would have been saved.

The old man continued:

"Burton tells me you wish to return to your world. Truly, I am sorry to hear it. Yours is a world torn by strife and dissension. But I will do as you ask. And because you have enemies above, I will do more. I will see to it that those enemies are eradicated. I am dispatching a fleet of planes to the outer world. You will go with them. When they are done with their mission, you will be free to go where you will."

The three knew what he meant.

"Boy oh boy!" Crane chortled in glee. "What a surprise those Japs are gonna get."

The Master stood up and shook the hand of each American. And into each pair of eyes he sent a strange, piercing glance. . .

EPILOGUE

REAR ADMIRAL PIERCE McDOWELL wore a worried expression.

"Damn," he grumbled to his second-in-command, "What's happened to those scout planes?"

The super battle-wagon *Montana,*

which was the Admiral's flagship, plowed steadily forward. Huge waves of gray-green water cascaded back from its prow. To either side, as far as the eye could reach, long lines of ships stretched over the water. Every fighting ship in that mighty task force was on the alert. They were going to attack Truk, the keystone in the island defense of Japan's Pacific Empire.

McDowell had ordered the planes sent out as an advance patrol. None of the twenty had returned.

Captain Randall, McDowell's aide, searched the skies through a pair of high-powered field glasses.

"I see them, sir," he announced matter-of-factly. "But there are only six. There they go in on the *Invincible*."

A few minutes later McDowell looked up from the report relayed by the *Invincible*. There was palpable bewilderment in his voice as he handed the paper to Randall.

"Here, Randall. Read this."

Randall read aloud:

"Lieutenant Commander Nicholson, as per instructions, took off on scouting trip. Met no planes in vicinity of Truk. Flew directly over island. Noticed absence of installations, enemy shipping. Ordered planes to land. Nicholson reports that there wasn't a plane, ship, gun or enemy on entire island. The only humans found were three Americans: a Miss Emily Hart, reported to have been lost in 1939 on a round-the-world flight, and her co-pilot, Larry Upton, and their cameraman, Richard Crane. They claim they were forced down by a storm, a week before."

THE END

The SPECTER of SHINTOISM

By PETE BOGG

ON THE anniversary of the attack of Pearl Harbor and the beginning of the Pacific war, Islamic leaders broadcasting from Melbourne to the millions of Mohammedans throughout the Netherlands East Indies' Archipelago called for the destruction of the Japanese, "Allah's enemies," and stressed particularly that "democratic countries have proved to be the friends of the Islamic peoples."

It so happened that December 7, 1943 was an Islamic holiday on which the accomplishment of the Fifth Pillar of the Islam religion is celebrated. "With Moslems throughout the world commemorating this holy day," the broadcaster said, "our co-religionists in the Netherlands East Indies have been ordered by the Japanese authorities to celebrate the attack on Pearl Harbor." And, towards the conclusion of his moving appeal, the Mohammedan leader exclaimed, "More than 3,000 Indonesians, living in our Holy Land and representing all Indonesian Moslems, are cared for by the Netherlands Government. . . . The democratic countries have proved that they are friends of the Moslems; they are respectful to our religion and to the Islamic people generally."

This was not the first time after the subjugation of the Indies that its inhabitants were publicly warned by fellow Islamites against the insidious attacks of the Nipponese upon their religious freedoms. And so, for those who have been listening closely to the tenor of Japanese broadcasts during the last few months, the warning possessed no element of surprise. Veiling their efforts in a very thin cloak of religious tolerance and understanding, the Japanese have been busily engaged in trying to "coordinate" the various religious currents in the Indies with the obvious intention to infuse them with the principles of Shintoism.

Around the middle of October a broadcast from Tokyo informed the world that a three-day conference would be organized at Sourabaya, on the occupied island of Java, of "various Christian communities with the purpose of discussing stronger cooperation with other religious bodies." This statement was preceded by another radio talk in which it was announced that a quarter of a million Christian natives on the island of Amboina had been united in a "conference for the realization of national service." Now "realization of national service" is an intentionally vague slogan which, if translated into simple language, would be found to have no religious but a purely political bearing. "You will have to do what we want, or else . . ." is the thought it means to convey.

For twenty months the Japanese authorities have tried to induce the large masses of Indonesians to support them materially in their war against the democratic nations. In close resemblance with the methods applied by the Nazis in Europe, the Nipponese have used every form of cajolery and threat to achieve this aim. But thus far they had not dared to touch upon one of the deepest-seated emotions of the Indonesians, their religious convictions. Now an all-out attack has evidently been started to arouse the "lethargic" population to enthusiasm for the co-prosperity policy by heralding to them the coming of a "crusade against England, the United States and Holland," the "annihilation of those who would suppress religious freedom."

In the hope that no one else will remember them, the Japanese propagandists conveniently forget the significant words uttered immediately after the occupation of the Netherlands East Indies by one of their outstanding propaganda Leaders, Okamura: "All those who oppose our principles of Japanese life will be annihilated. We will not tolerate principles opposing the idea of Tenno—either in our own country or outside our frontiers."

What is the Tenno idea? Tenno in Japanese means Emperor of Heavenly Origin. In the Japanese conception the Emperor is the Son of Heaven and this idea has been prevalent throughout the history of Japan. The investment of the Japanese Emperor with political power in addition to his religious authority, is the result of less than a century of Nipponese endeavors to use religion as a mere background for their political gains.

Obviously, the untimely utterance of Okamura could not fail to sow doubt in the minds of the leaders of the various religious movements in the Netherlands Indies. They must have asked themselves whether it was the Nipponese intention to introduce Shintoism into the occupied territory, thus slowly but surely eradicating the existing churches and religious institutions. Gradually they must have felt their existence more and more threatened—in spite of subsequent Japanese promises.

No doubt the invaders themselves recognized the danger of forcing their religious beliefs too brusquely upon the peoples of the Archipelago. They "retreated one step, in order to jump further"; they have, in fact, on various occasions, put themselves out to exhort both Moslems and Christians that they should "remain faithful to their beliefs." As far as the Mohammedans are concerned, the Nipponese are well aware of the need of extreme watchfulness with their Tenno propaganda. The Koran is the sacred word for more than one hundred million Mohammedans living in countries at present occupied by Japan. Whoever dares to touch the Koran will no doubt unchain powerful forces of resistance, forces that will shrink neither from threats nor bayonets. Recognizing this irrefutable fact, the Japanese—with many smirks and bows—have hastened to assure the Mohammedan Indonesians that their religious freedom will be respected.

THE very fact of this assurance must have increased considerably the suspicion in Mohammedan circles as, before the invasion of the islands, this religious freedom was rigidly maintained by the Netherlands authorities. Gradually, it became clear that the Japanese were merely using their smiling reassurances to hide a completely different policy. When, for example, the Japanese-controlled Batavia radio announced solemnly that certain Japanese measures aimed "at heightening the level of the Indies' peoples by placing them under the influence of Oriental culture," adding that "the Tenno idea in particular will be applied to the Islamic as well as to other religions," there was every reason for the Indonesians to take these statements seriously and prepare themselves for the shock of further developments.

Even when the Japanese attitude toward the various religions of the Archipelago had as yet become less threatening, there were indications of the course they meant to follow. In November of last year, for instance, the Japanese military authority seemed perfectly willing to enable pilgrims to make their yearly trip to Mecca, Mohammedan holy city. They offered safe conducts for all pilgrims' ships—with only three restrictions. In the first place, the occupation authorities had to be informed of the exact departure date and the destination of each ship. Secondly, neither crews nor passengers were to engage in matters of a political nature; and finally, the ships would exclusively carry pilgrims.

These restrictions seemed reasonable enough. The trouble was, however, that the Japanese had used so much time before announcing them that their official permission for pilgrims to travel to Mecca came much too late. In this way, while preserving a semblance of suavity, the Japanese had gained a full year in which to invent new excuses for withholding their permission for the yearly Hadjih. Naturally, they did not fail to spread the rumor that the pilgrimage had been sabotaged by the British who, so the Japanese declared, had refused to recognize the Nipponese safe-conducts for the pilgrim-carrying ships. It was not to be expected that the occupation authorities would reveal the real reason for their subterfuge, namely that they simply did not have the ships to place at the disposal of the pilgrims, nor expected to have any ships available in the coming years. By dilly-dallying with the official permission and by placing the blame on the British, they sought to "save face" before the newly-conquered population.

Following the tradition Japanese technique of announcing long-existing conditions as newly-created improvements, a broadcast from Tokyo annouced last August that both the Mohammedan New Year and the birthday of Mohammed would be added to the list of official holidays, "out of respect for the religious traditions of the Indonesians." This decision was heralded with great emphasis as thought it were a new and unheard-of

act of tolerance on the part of the Japanese benefactors. The truth of the matter was that throughout the history of the Indies these Mohammedan holidays have always been officially recognized.

If, after these and similar occurrences, the people of the Indies had still been in need of further warnings against coming Japanese efforts to harass their religious movements, the action of the enemy on the island of Bali must have been sufficient to convince even the least suspicious. In August a "Cultural Research Society" was formed in Bali, under the sponsorship of the Japanese. Its purpose was stated to be the promotion of advanced culture among the people of Bali "who for centuries have been influenced by superstitions derived from a special branch of Hinduism." Presumably this referred to Balinese rituals of purely Hindu origin and dating back to a period long before the advent of Mohammedanism in the Indies.

STEADILY, the Japanese effort to centralize all religious movements into one organization increased and became more and more noticeable. After their "interest" in the Mohammedans and Hindus, they also busied themselves with the Christian churches, with the intention to permeate every one of them with the Tenno idea, as soon as they are placed under the direction of Japan.

In the island of Celebes the work of thus "uniting" the churches has evidently already been accomplished. The organization of a "Christian Service Corps" was broadcast, this being a federation "of more than ten Christian sects, embracing a total of at least one thousand churches." As an apology for the institution of this "federation" the Tokyo announcer added that the measure was necessary because "these churches have been political instruments in the hands of Great Britain and the United States.*

Strangely contrasting with this accusation is the fact that Tokyo has repeatedly organized large-scale conventions, the avowed aim of which was "to stimulate the continuation of the war in a more intensive manner." And as if to underscore the true nature of these gatherings, Tokyo announced time and again that they were held under the combined protection of the Minister of War and the Minister of the Navy.

In Celebes a reunion of Mohammedans was held which, as described by the Japanese themselves, served the purpose of discussing "the various ways in which closer collaboration with the military authorities could be achieved." Not a single word was said about religion.

The very same picture was offered by another convention of "the representatives of ten million Mohammedans from the Malay States and Sumatra." These "representatives" were forced to adopt a resolution in which they declared their eagerness "to contribute to the Japanese military effort." Subsequently, the convention members were compelled to pay public worship to a monument erected in honor of Japanese soldiers who had fallen during the seige of Singapore.

Another striking example of these badly camouflaged efforts to get the support of the Indonesian people via their religious movements, was the convention held at Medan, Sumatra, last spring. In true Japanese style the meeting was reported to have closed with the adoption of a resolution expressing "the need of destroying Great Britain and the United States" and of "continuing the war with greater force than ever." But not a word pertaining to religion was uttered at these "religious" conventions.

Being well-armed and doubtlessly "on top" at this moment, the Japanese will not find it too difficult a task to force defenseless thousands in the Indies to attend conventions, and to refrain from opposing resolutions in favor of their war aims. They also have the power to misquote religious leaders of the Archipelago, a power which they use unsparingly; and they may even pretend an interest in broad-minded measures for the safe-guarding of each religious movement—rules which were never necessary before.

It is quite another matter, however, to bring about the general acceptance of Shintoism and of the Tenno idea. Japan is striving to make Tokyo not only a political but also a religious center, by imposing a cultural as well as an economic imperialism on the peoples of the Far East. It is not in the nature of prophecy to say that the Nipponese invaders will never succeed in this gigantic change-over. Mecca is the historical center of the Islam and no power on earth can change this. For the Japanese to believe that they can transfer this center to Tokyo, borders on the ludicrous. At the beginning of the war the Mohammedans found words for this in a proclamation to their followers, "We will fight for the Netherlands Indies—and for Allah."

At times Mohammedans, as well as representatives of other religions, have been at loggerheads with the Netherlands authorities. But whatever their differences may have been, they were never of a religious nature. The principle of the well-known nationalist, Dr. Tjipto Mangoenkoesoemo, who declared himself "self-evidently on the side of the Dutch" in the battle against Nippon, was typical of the Indonesian attitude. For he, like the others, realized that behind the beautiful phraseology of Japanese politicians were hidden sly attacks on many freedoms which throughout several centuries had never been assailed.

THE END

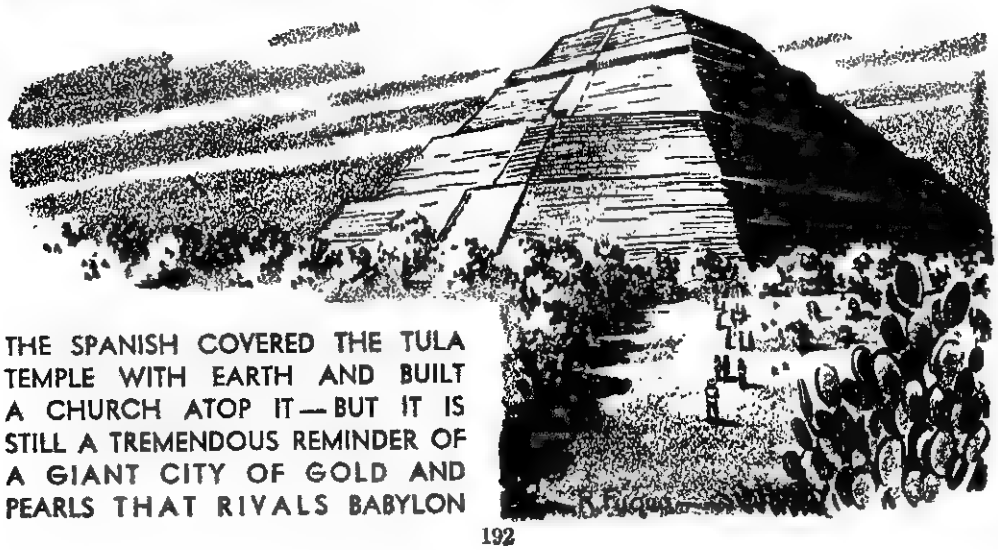
* *For those who can read between the lines, this statement means that the Japanese met with strong resistance from Celebes' Christians. Naturally, this unwillingness to accept the "blessings of co-prosperity" was blamed upon their religious adherence.—Ed.*

SCIENTIFIC

GAMES IN WHICH RUBBER BALLS WERE USED WERE PLAYED IN A COURT 600' WIDE BY 1900' LONG ENCLOSED BY A WALL 260' THICK AT THE BASE AND 32' AT THE TOP CAPABLE OF SEATING THOUSANDS!

A WAR DRINK WAS GIVEN TO AZTEC WARRIORS MADE OF THE JUICE OF THE MAGUEY, OR CENTURY PLANT. IT WAS CALLED PULQUE AND INSTILLED ALCOHOLIC COURAGE

THEIR RELIGION WAS A BLOOD-THIRSTY ONE AND THEY FREQUENTLY WENT TO WAR FOR THS SOLE PURPOSE OF SECURING CAPTIVES FOR THEIR SACRIFICIAL RITES TO APPEASE THE GODS



THE SPANISH COVERED THE TULA TEMPLE WITH EARTH AND BUILT A CHURCH ATOP IT — BUT IT IS STILL A TREMENDOUS REMINDER OF A GIANT CITY OF GOLD AND PEARLS THAT RIVALS BABYLON

MYSTERIES

ANCIENT AMERICANS—The Aztecs and Toltecs

By L. TAYLOR HANSEN

Most of our knowledge of these American races comes to us the hard way—because of the ruthless tactics of the Conquistadores

ONE of the very best pictures one can get of the Aztecs is given to us through the eyes of stout old Bernal Diaz Castillo, one of the first Spanish to set foot upon the North American Continent. His "History of the Conquest" reads like an adventure novel. One relives with him the scenes which he witnesses; fights with him through momentous battles; and glimpses through his eyes the glory of the Ancient Aztec capitol. Ignorant and bigoted though he might have been, this old conquistador was thoroughly fair and not insensible to the havoc which he had helped to bring about.

Therefore in the discussion of the nation which he describes so well, let us call the land by the name he calls it—Mexico, and the people—The Mexicans. And let us remember that this was the ancient name. The Spanish first heard it from the natives of the coast where, being given trifling little presents of gold, and inquiring about its origin with greedy eyes, they were told of "Mexico and Culua" words which at that time, he admits, "we did not understand."

Bernal Diaz never did understand the word completely, because he probably never took the trouble to inquire from the rich sources of learning around him, its ancient meaning. Most of these sources are denied to us today, but nevertheless, from studies of the Aztec, we can trace out something of its meaning. The "war" drink given to Aztec warriors, and of which Mexicans are still more fond than is probably good for them, is "Pulque," made from the juice of the maguey, which is known to us under the name of the century plant. The plant was under the special protection of the War God—Mexitli.* Literally, the name would be mehtl or maguey, xi or root, and tli the termination. One might translate it freely as "Out of the Maguey-root".

Like the papyrus of Ancient Egypt, this plant gave the Aztecs, and probably the Toltecs before them, an astounding number of benefits. They ate the leaves, cooking them in a number of ways; they pounded them to make paper for their books; and they shredded them to make string and rope, to mention a few of the uses.

The maguey, an aloe like the yucca, is a ceremonial plant of the most sacred type. One wonders if this originated with the fact that it had spear-like leaves, or whether it rayed out from a center, thus reminding them of a sun-plant, or both? To the Indians the fibres are used to weave ceremonial clothes, the soap from the yucca root has special power when used to wash the hair, and the food and wine from them a special significance in ceremonials. And that is why the Toltecs used maguey thorns to draw blood from their ears and tongue during certain rituals.

Incidentally, the power of the maguey over the collective imagination of Indian Mexico is not dead. Zapata, (who bore an ancient name meaning lance or dagger), and was the Indian leader in one of the many succeeding revolutions when the red-skinned element of Mexico was overthrowing the Europe-inspired regime of Diaz, used to sally out of his mountains, and woe to the man he caught wearing European clothes! He was promptly strung up on a flowering maguey where within a day the spear-like blossom would run right through his body before it burst into bloom. To the Indian mind, this form of execution had a special significance which was probably never fully understood by the Spanish-speaking aristocracy of Mexico City.

Simpson is of the opinion that the land of Mexico is a half-desert today because she has been cultivating a desert plant so assiduously for the past thousand years. Not that the blame lies entirely with the vast maguey plantations which the Aztecs cultivated. He also places part of the blame with the tyrant corn. In this distribution he seems to have neglected the cactus which was also a domesticated plant of the Indians. Nevertheless, there may be something in his theory.

IT HAS often been said that the civilization of the Ancient Mexicans, or Aztecs, presents one of the most striking series of contrasts ever observed in any people. They exhibited, at the same time, the most unexampled aspects of barbarism and refinement existing side by side.

This is entirely true, yet from the Indian viewpoint, it is completely understandable when we see that the barbaric elements are due to the ceremonials of a tyrannical and bloody religion. It may be added that much of the "atrocities" practiced upon the white invaders across our own western states by the red-skins is of the same

* *Same as Huitzilopochtli.*

ceremonial nature. War with the Indian, was a game of wits. They did not fight to kill, but to take captives for their blood-thirsty gods.

The trouble with a bloody religion is, that once the cycle is established, it becomes a vicious cycle. During lean years, more blood is spilled so that the angry gods will once more bestow their favors. And if an invader is upon the soil, then certainly the gods are tremendously angry. However, if the gods are appeased, it is not well to reduce the number of sacrifices, because the gods might then again become angry. Therefore in good times, the harassed people must make war to obtain sacrifices in order to keep the gods in a state of good humor. Bernal Diaz Del Castillo and his fellow-invaders arrived when the gods were very angry indeed!

Naturally this state of affairs is not conducive to having friendly neighbors, who have their own gods. Thus war was not a matter of a life and death struggle, so much as a series of raids for the purpose of obtaining captives for sacrifice.

It is interesting, however, to notice that bloody religions were not always the order of the day in the civilizations of the Indians. Behind the advance of the Aztecs with their carnage-filled religion, were the Toltecs and their god who allowed no human sacrifice.

Perhaps it is one of the ironies of history that our best picture of the magnificence of the Toltec civilization comes down to us in the language of her conquerors, which in turn, is fast becoming a lost tongue. Taking that relic of Aztec literature, "The Song of Quetzalcoatl", itself a worked-over fragment of a much more complete and understandable whole, yet from which, like the broken pedestals of Greek Coliseum, we can glimpse the structure which once existed, and reading it carefully as we walk through the mountainous earth-covered mounds—we are suddenly transported to this city of the past—Tula, The Magnificent!

NOT even the Tenochtitlan (Mexico City) of the old conquistador with its canals, its busy market place, its dazzling white towers rising from the water, its gardens and crowded causeways, can compare to the grandeur of old Tula. One needs a rich imagination to reconstruct the palaces of emeralds, of gold and silver, or to visualize the temples fashioned of mother-of-pearl and of coral, with their rooms of exquisite wood-carving and decorated with the feather mosaics of the most iridescent shades, which glorified the Toltec capitol.

Today, wandering through the earth-covered mounds of Teotihuacan which has been identified as Tula, it would be almost impossible to visualize the living metropolis without this literary fragment from antiquity to act as a guide. Yet with the help of this trochaic saga, the great earth-covered hill crowned with a Spanish church, is again divested of the blanket of earth which the Spanish laboriously dumped over it (since it was too large to destroy) and once more becomes the shining Pyramid of the Sun.

One can again see this stupendous edifice, greater than anything which the glories of Babylon, magnificent as they might have been, could rival. Perhaps it is a day of ceremonial when the great edifice, glowing in golden beauty, is alive to one of the colorful ceremonials to the Christ-like Quetzalcoatl. (The pageantry of the Katchina or Matchine dances which flash here and there today throughout our own Southwest and Indian Mexico, are prominent in the dances of Oaxaca. The spread of them suggests that they were not as late, or as centralized, as the Aztec Mexican Empire, but originated with an earlier and more extensive culture.) In our reconstruction of the Sun Pyramid (the name suggests an earlier origin than Quetzalcoatl), we shall not be striking far from the truth if we imagine this ceremonial a glorified Katchina Dance, with pearls and emeralds sparkling from the golden-threaded tiaras and costumes of sumptuous splendor. We can suppose that these kaleidoscopic rituals lasted for days during the periods of festival even as they now do in the pueblos of the Southwest, and that the drums beat day and night as they accompanied the chants of the priests. Similarly, on the pattern of present ceremonials, with the exception of short rest intervals, other groups carried on by torchlight throughout the nights—even to the final dawn. All Indian festivities throughout the Americas, end not at twilight, but at dawn (usually the fourth dawn, four being the mystic number) with the rising of the sun.

Or perhaps, in our reconstruction of this ancient metropolis of North America, one of the many types of ball games of which all Indian nations are so fond, was going on in the vast court 600 ft. wide by 1900 ft. long, which stood before the Great Pyramid. Throughout Mexico, these games were played with a hard rubber ball —rubber being one of the original products of the American Indian.

In this case, probably not only the unused bits of the Great Court was crowded with spectators, but also the mighty wall beyond, whose base of 260 ft. thickness and thirty-two feet upon the top would accommodate as large a throng as our most modern football arena. This wall, in spite of its crowns of fifteen minor temples, was over a mile in length, and probably constructed for just such occasions.

TO THE east was the Sacred Court, facing the avenue known as The Street of the Dead, and in the center of the court a truncated pyramid whose first altar was approached by thirteen steps. This signified the thirteen cycles of the First Sun Age. Back of it was a higher altar approached by a single stairway of 39 steps which is symbolical of the 39 cycles of the Four Sun Ages. This symbolism sounds very Aztecan and for that reason is to be questioned. We know that the Ancient Mexicans considered that their god Tezcatlepoca, he of the "Smoking mirror"

who taught them how to tear out living hearts, was sometimes said to have ruled over this First Sun Age. Again we are told that he was a leader in the many migrations of his homeless and harassed people, during the course of which he had an argument with other leaders, and not obtaining his way, had them killed by stealth. The latter explanation sounds the most plausible. The former story sounds like an attempt to give him an antiquity he doesn't deserve, especially in view of the fact that the "Old-Old" god of the Mexicans was the Fire god, a figure partially veiled.

Was this old old god, again our "Veiled Majesty"? Was this Amen figure the emperor who ruled over the First Sun Age? A span of over six hundred years was, of course, too long for one life-time of a mortal, but a very short life-span in the life of a deity. If this chronology was Toltec before it was twisted around by the Aztecs, then the fourth cycle was originally Toltec. This throws the history very far back into the veils of the past, especially if we accept it as the long count instead of the short cycle of fifty-two years.

Some Aztec authorities do not believe that the Toltecs were conquered by the invading Mexicans, but by an earlier tribe—the Chichimecs. If we realize that "mec" means "people", then this name has a familiar ring. Were these the "Tiger Tribes" who, in their march to the south, may have crossed the Isthmus and invaded South America? Could they have included among their original number such peoples as the Kitchae of Kansas? And the very name Quichua * (Chee hua), the latter part of which in all the languages of Guatemala (Hua-te-ma-la) always means ancient or sacred, immediately suggests to mind a desert valley which because of its widely terraced ranges, in a climate where now but little grows,** is an enigma to archaeologists. I am speaking of Chihuahua. Does it mean just what it says—"The ancient, sacred land of the Chees"?

Yet in this trail which we have followed through two conquests to a city which, if this intrusion did take place, could not have fallen later than 800 A.D. because we have too many events to account for, we seem to be on the point of solving one mystery only to be confronted by another equally as baffling to us

THANKS to a fragment which survived the funeral pyre of Indian literature and history, we are able to reconstruct the great capitol of the empire which flourished before the one before the last. Yet we do so only to discover that three great empires had gone before that, each ruling many ordained cycles, and that the first was the most important (it had more stairways) than any of them. This first colossus to which magnificent Tula looked back with awe and reverence, was called "The First Empire of the Sun". The very name suggests that there were others to follow.

Are there other survivals of the conflagration which, though but mutilated fragments of what they once were, nevertheless, extend new vistas through which otherwise we would never have been able to look? And as we look into other civilizations, will we always find the veiled figure of the "old-old god", even as we find him standing behind the bloody patheon of the Aztecs; or meeting a completely revolutionary (for the redman) religion such as that of the Christ-like Quetzalcoatl with his single deity of unwavering goodness, we discover in the eastern Sacred Court a pyramid to a vast but well-known and revered historical past?

In the long march of civilizations across the Americas there are other such fragments which give us momentary glimpses of these lost empires, but in all of them, is there anything as taunting to the scientific bent of mind (even as cool water in those vistas which are fashioned on the burning sands of the desert by the fingers of the heat, to a dying man)—as this pyramid covered with the symbols of a lost history—this pyramid whose thirteen cycles leading up to that first altar, we shall never be able to know?

REFERENCES

True History of the Conquest of Mexico, by Bernal Diaz Del Castillo, written in 1568 about events from 1514 on.

Trans. from orig. Spanish and published by Geo. G. Harrap Co., Ltd., in 2 Vols. 1927.

Todd Downing, *The Mexican Earth.*

John Hubert Cornyn, *Song of Quetzalcoatl.*

Leslie Byrd Simpson, *Many Mexico.*

A most interesting curiosity, but hard to obtain, is the *Documentos Ineditos Relaciones de Yucatan* (Unedited History).

* *Incas.*

** *South of Arizona.*

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DISCUSSIONS

AMAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. Bouquets and brickbats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department. Get in with the gang and have your say.

A DEATH RAY?

Sirs:

For the past 2½ years I have been reading AMAZING STORIES and have been content to just read it and not enter into discussion or criticism but after reading your March issue I no longer can hold my peace.

All of the stories are 100 percent good with the exception of "Journey In Time To Cleopatra". When writing a story that goes into the past it is best not to include facts that are false and can be checked up on.

To Karl Bouvier Jr. this is just to remind you that the world is made up of ifs and hopes and also to let you know that a death ray was invented 4 years ago and turned over to the U. S. Government who put it where no one could get it just for good measure.

To all Fans, I think it would be a good idea if we were to write to each other and carry on discussions between ourselves about the stories and things that interest us in them. All letters will be appreciated here. Hope to hear from some of you soon.

Fred J. Stewart
612 Cherokee Trail
Portsmouth, Va.

Many of our stories take license with the past, and much of their fascination is contained in the fact that we allow ourselves to see the past as it might have been, if . . . So you see, Mr. Herman had his reasons of not sticking strictly to truth. After all, we are a fiction magazine, aren't we?—ED.

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PHILOSOPHY BEHIND A. S.

Sirs:

I like the philosophy behind the existence of AMAZING STORIES. Since progress is said to be the history of man's dreams, you publish history in advance. I like the genuineness of the characters, and the illustrations, but especially "Scientific Mysteries", because they so tantalize my natural curiosity.

But please, how about less emphasis on beings of the "Headless Horror" type, and more upon those who've developed some of the great potentialities which scientists assert are lying untapped within the here-and-now common man? Let's have some as great or greater than their gadgets!

G. H. Byland
1245 Sixth Ave.
Des Moines 14, Iowa

We are rather tickled to know you consider we publish history in advance! That is a rare compliment on our authors' and our own foresight in developing this magazine's fiction. We'll try to get some stories of the type you request.—ED.

A NEW FAN IS BORN!

Sirs:

The letter you are reading now is my official entrance into what is referred to as "active" fandom. I have never written a letter to a magazine.

The reason is probably that I have never found a good reason for taking up even a few minutes of the editor's valuable time. Even if you don't print this, at least lend an ear.

I think I represent at least part of the "silent" group of fans—that part that has begun reading stf about three or four years ago, and consequently has missed out on what are usually considered the classics of fantasy and science-fiction.

This is my plea:

While I realize that there are plenty of good stories published in stf-mags today, there is an overwhelming percent of trash, probably used only as filler. Now why not, instead of using that stuff (which a self-respecting fan probably will not deign to read anyway), print, in serial form if there is not room to run a whole one per issue, some of the older classics? There should be enough in the back files of AMAZING and *FA* to keep that hack that you are printing out. I

refer, by hack, to such masterpieces of degeneracy as the Lefty Feep series, and others of the so-called humor stories. (Humor they certainly aren't, plot they have little, and development and, more important, style they have none.) By style I don't mean that I expect the touch of a Merritt or a Lovecraft or even a Weinbaum on every page, but for God's sake, no more of that stuff that is plainly filler, and written for that and nothing more.

About that Lemuria yarn—

Ed., old boy, you've got something there. There are two hypotheses that come to mind regarding that particular story, or article, or whatever one is supposed to call it. One, it is a fake. If so, it will probably be a rippingly good story at any rate. Two, it is the real McCoy. If this is true, you have on your hands the biggest scoop in magazine history. I can hardly wait for this one to appear

Re Scientific Mysteries—

This is the best series of articles I have ever seen in any publication. Of course, it is on a subject in which I am intensely interested, which may have something to do with my opinion of it. Some of his hypotheses are a bit too far-fetched, for example, the one regarding the "Two Lands," in the May Amazing article. It is one of the established facts regarding Egyptian history that the two lands were Upper and Lower Egypt. This curious dual principle was one of the outstanding things about the earlier Egyptian dynasties. The kings' treasury was even built with two doors, and the king's servants were "duplicated," so to speak, that is, there might be two "Overseers of the King's Cosmetic Pencil,"—one to minister to him as the Lord of Upper Egypt, and the other to minister to him as the Lord of Lower Egypt.

However, regarding that connection between Egypt and the Americas, Hansen might have brought in that the Pharoahs' treasure-house and their palaces were usually red, that is, only in the Delta country. In fact, the name Pharoah (Egyptian Per-o) originally meant "the Red House." This is interesting in regard to the Amerind's belief in red as the sacred color of the sun. The confining of this color-belief to the Delta is also interesting, inasmuch as that part of Egypt was believed to have been overrun by the Lybians, that people which Hansen seems to take such a special interest in.

Almost forgot to rate the stories.

1. Murder in Space—Reed has another honey. Not up to his "Empire of Jegga," though.

2. I, Rocket—An original idea, as far as I can determine. Nice going.

3 The Free-Lance of Space.

4. The Headless Horror—the only thing that keeps this as high as it is, is that the others were much worse.

5 & 6. MM'sGT & TCD were just too bad to be mentioned in the same letter with the first two. This is what I mean by my term trash

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in the 4th paragraph.

Leland Hickling
Davenport, N. Y.

The Lemuria story appears next issue! Mr. Shaver, the author, says it is true, insofar as he claims he "remembers" it. We are personally convinced he is sincere. You can draw your own conclusions when you read it. He tells us it is true, and we tell you it is true that he says it is true. It is entirely a personal matter with your editor when he considers the manuscript and himself believes it—but after all, we are as much a fan as you are, and we agree, true or not, it's a hell of a good story!—ED.

LETTER STORYETTE

Sirs:

"Cripes," gasped Beogh, moving with a swiftness belying his enormous bulk, "it's Elmer Filch!"

"Beogh," Filch said in his bass voice, "I have to find out—!"

Abruptly Filch flung himself flat on the floor as the Venusian glow-lamps extinguished themselves at Beogh's mental command. A knife whistled over Filch's head in the darkness and imbedded itself in the steel door with a metallic *clang*. A needle-gun sizzled twice.

Filch immediately withdrew the dangerous, compact little weapon from his pocket with a lithe, catlike motion; he triggered it swiftly! A shrill scream rang hollowly in the confines of the room as a Venusian fell, blood welling from his breast. Filch fired again and a dull thud echoed out as the second Venusian slumped to the floor.

When the lights flashed on again, Filch could see that the jumbled room was empty, except for the two dead Venusians, wallowing in a pool of blood, and a very beautiful girl with red hair, green eyes and a dangerous-looking rod in one tan little paw. Filch removed her weapon with a disarming smile and said calmly, "I have to know—"

Unexpectedly, the lights winked off. Filch heard the hiss of a needle-gun and felt a sharp pain in his left arm as the needle struck. Blackness swept over him and he flopped flat on his kisser.

Chapter XXXIV

Elmer Filch awoke dazedly on the hot Venusian desert. Spitting out a mouthful of sand, he looked about him. He realized vaguely that he was in the "Land of Tranquility," Venusian equivalent of Devil's Island.

As Filch stood up, three Venusian convicts crept toward him with knives glittering in their hands. Filch angrily tore the Venusians to tiny fragments with his bare hands and stalked off toward a nearby house. He walked in without knocking and discovered a red-bearded giant working a crossword puzzle on the kitchen table and swilling Xeno. The giant looked up.

"My name is Red," murmured the red-bearded giant. "Watcha want?"

"Well," Filch said calmly," I've got to learn—"

To Filch's intense horror a glittering, snub-nose gat poked its snoot through the kitchen window. A searing lance of flame leaped forth

from it and Red's head vanished in a burst of blue smoke.

Filch fired his own weapon and was rewarded with a scream of sheer agony. Three Venusians fell dead.

Later, after he had stocked up with provisions, Elmer set out across the steaming desert toward the place where lay the wrecked space-ship that had been his home before he had escaped from the open-air prison so many years ago.

Drawn and exhausted by his arduous trek, Filch finally arrived at the wrecked space-ship. Filch was horrified to see that the wreck was a wreck, glinting dully in the faint sunlight.

Abruptly an emaciated old man with rheumy eyes tottered out of a near-by cave and cackled shrilly.

"By Gad—it's Chester Twilch!" Elmer exclaimed passionately.

"Why, you're Elmer Filch!" the old man cried feebly in dawning recognition. "What do you want?"

"I have come all the way across this burning desert to ask you one question upon which rests the fate of two worlds . . ."

"Yes?" cried the old man. "What is it?"

Filch leaned over and whispered in Twilch's ear dramatically: *"Does your taster react 'different' lately???"*

In answer the old man immediately produced a cigarette from his tattered tunic and gobbled it up. Slowly his wrinkled face turned green and his rheumy eyes filmed over. His tongue dangling limply from the corner of his mouth, he collapsed on the ground with a hoarse, gurgling blood-curdling scream. . . .

(*To be continued the middle of last month. Be sure to miss the concluding chapters of this pulse-pounding serial.*)

Gerald Waible
1219 N. E. Roselawn,
Portland, Ore.

P.S. I wholeheartedly concur with your premise that the size of the shoes he fills varies inversely to the size hat an author wears. Although I am devastatingly handsome, undoubtedly the greatest humorist in America, and the possessor of a dazzling intellect, I am not egotistical about it in the slightest degree. . . .

We present this humorous letter from a reader with a hearty chuckle.—ED.

MAGS FOR SALE!

Sirs:

Perhaps the heading strikes a familiar chord, perhaps it doesn't. Anyway we are a lost cause as most of the boys are overseas now and the rest are too busy. I have a Medical Discharge from the Royal Canadian Air Force and am back in the States for good.

I have AMAZING STORIES dating back to 1926; Monthlies, *Quarterlies* and *annuals*. Also other Science Fiction Magazines dating back to 1910. A complete collection of Edgar Rice Burroughs' works, first editions, reprints, magazine copies and foreign editions. Also other popular books by

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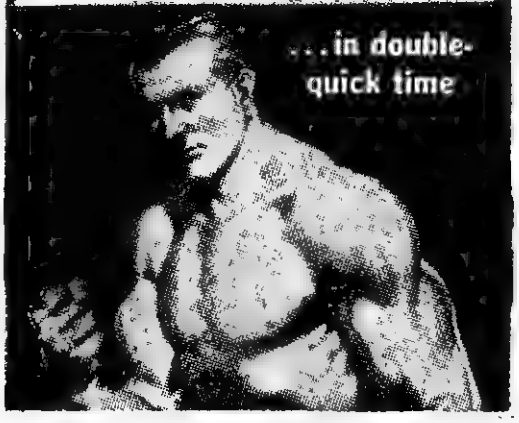

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As the Texas Fantasy Fictioneers is a past organization now, and as I am unable to keep all the collection I am offering them for sale to those fans who have not had a chance to read the older stories. Merritt's "Moon Pool," Coblentz's "After 12,000 Years," Baron Munchausen's Scientific Adventures" by Hugo Gernsback, and H. G. Well's shorts are a few of the complete stories. I have very few broken isues in my collection.

Just a word of praise along the line here—"The Eagle Man" by Wilcox is one of the best stories I've seen in Amazing for years. How about a sequel to it? It certainly calls for one and I am surprised that one has not appeared yet.

One other thing and I close—hang on to St. John. For years I have watched his changing illustrations in the Burroughs books and like his style. His illustration in any story is enough to sell the story to me, for I've never seen him illustrate a poor story.

J. Frank Autry
602 North 23rd St.
Corsicana, Texas

Okay, readers, come and get 'em!—ED.

A FIRST FOR "I, ROCKET"

Sirs:

This letter has been gradually composing itself in my mind ever since I first started reading AMAZING. This issue was the final touch, so here comes nothing.

The reason for my giving "I, Rocket" first place in my estimation is no reflection on the ability of author Reed and his truly excellent novel, which I greatly enjoyed. However it seems to me that Bradbury's tale is in an entirely different category. It is an unusual story in an environment where the extraordinary has become commonplace. More, please.

The first AMAZING I read (about two years ago) was a quarterly which I obtained via a second-hand book store. Since that time I have read nearly all the SF mags in the place, and have arrived at this conclusion: AMAZING STORIES has no serious competition as far as either quality or quantity is concerned. At first I paid little attention to the letters from the readers, and such departments. Then as the supply began to dwindle, I would read the whole issue through, also paying more attention to the covers. I have received the impression that most of your fans are between the ages of thirteen and sixteen. I hope this is not so, but shall continue reading nevertheless.

The cover on this issue is really the best I have seen yet, though it could be improved on. Why not sometime use a picture showing a rather *distant* ship with the earth below and the distant stars shining above?

As for suggesting improvements in the stories, I can sympathize with the authors, as I have myself tried beginning an SF tale already. If I should ever get anything written which satisfies my (at present) high standards, I shall sub-

mit it for your criticism. Until then, I shall not speak too harshly of the work of others.

Warren Rayle
220 College Street
Findlay, Ohio

"UNCROSSED" WIRES!

Sirs:

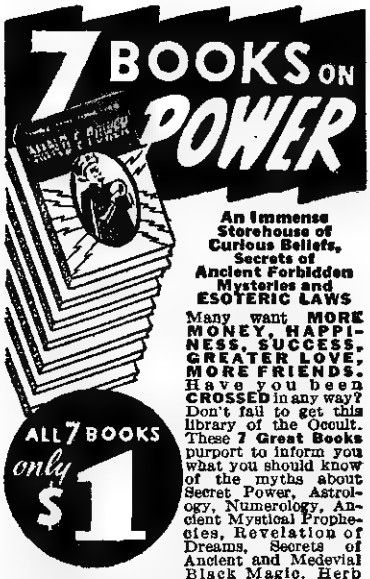
This letter, although ordinary in appearance, is really unique, as it is the first one I have ever written to any publication. Previously, I had viewed with antipathy that section of any magazine known as "Letters To The Editor," as most of the letters contained the usual "I liked this—" or "I didn't like that—" drivel. However, I realize now that this section is an excellent medium for expressing the reader's viewpoint, and brother, express myself I shall!

Being an Army projectionist, I was especially interested in Leroy Yerxa's "Crossed Wires" which appeared in a recent issue of AMAZING STORIES, but as there were certain things in the story that didn't "hold water", this letter is therefore tendered as rebuttal.

The basis of the story is Marsh's ability to "read" literally the sound track on a motion picture, but since this is a science-fiction story such an assumption is allowed and I'll pass over that. However, if you've ever seen the sound track running in a projector, past a given spot at the rate of 90 feet per minute—!!! —and as for "reading" it while the film is motionless would be even more of a task as a single word converted to it's visual equivalent on the film, can extend as much as one foot along the length of the sound track.

However the big flaw is Marsh's statement "I've been in this game for a long time" (He couldn't have been in it much over 14 years). We can infer from that statement that his ability to read the sound track was due to his years of experience in learning to interpret the "black, wavy line of the movie sound track". Now from the serial references to the "wavering sound track" and "wavering black line" it is evident that Mr. Yerxa is referring to that type of sound recording known as "variable area" recording, in which the sound is represented as a single, continuous line of varying frequency and amplitude (said line incidentally, is WHITE not black!). Therefore, our hero, Marsh, did not get very much practice in reading this type of recording, because soon after sound-on-film came into universal use, at least 25 different types of recording were advanced and put into general use, each differing from the other, and the "variable area" type was more or less superseded by the superior "variable density" type of recording, in which the sound is represented on the film, as thin horizontal lines of varying density, which are all of the same width and extend the entire width of the sound track.

Since both of these types of recordings are merely photo-electrical, MAN-MADE manifestations of voltage fluctuations caused by sound



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waves impinging on microphones, why should Yerxa assume that the actual sound waves look like the early variable area type?—especially since variable density has been in use more than variable area? Since Marsh would be "seeing" *actual* sound waves, they wouldn't appear as vertical lines, which traveled up (or down) and which could be viewed from a distance (as those on the movie film) but would be traveling HORIZONTALLY *TOWARD* Marsh, and would therefore present an entirely different picture as those Marsh had been accustomed to seeing, with the result that they would be meaningless to him.

Another flaw was the statement "Marsh waited for the series of light dashes that the human eye produced—" Only sounds were supposed to produce light. The eye, being a visible factor, should have produced sounds.

Another statement which was correct—"There was no actual light in the morgue, therefore no sound to register in his ears" was contradicted a few sentences later by—"The other could see nothing in the dark, yet Marsh could hear the high-pitched tone of teeth, white teeth."

Marsh, while in the dark morgue, shouldn't have been able to "see" the sounds the other man made, for the same reason he couldn't "hear", and that reason being that light waves do not exist in the dark. Yerxa knew this when he wrote "therefore no sound to register in his ears" (lack of light), but evidently he wasn't aware of the converse; i.e.—if light couldn't be converted to sound because of the darkness, then neither could sound be converted to light.

Well, despite this long winded discourse, I still think it was an excellent story with a very ingenious idea, and Yerxa is to be congratulated for his efforts. If some of your other writers could be shaken out of their lethargy, long enough to write one "different" story for the sake of literature, rather than five run-of-the-mill items for money, your magazine would really be something. I've noticed lately that the quality of your stories has depreciated quite a bit. Could it be that Selective Service has something to do with it?

Joseph G. Serene's letter to the editor gave me a big laugh. Doesn't he realize that although such statements as "He offered her a cigarette" may not be incidental to the story, at least such statements are adding to the wordage of the story, thereby increasing the amount of revenue to the author. Surely, Joseph, one of your moral viewpoint, should be a champion to the "brotherhood of man" and not insist that such statements be deleted, depriving the author of the few extra cents to feed his starving children! Although Serene's letter need not be honored by further comment, I wish to point out that the medical profession recognizes the therapeutic value that tobacco offers, in retarding most forms of tension, anxiety and nonfunctional nervousness. Joseph, would you call a soldier sitting in a foxhole, lighting one cigarette after another to ap-

pease tortured nerves, as he sweats out an artillery barrage, a cigarette fiend?

Well, Ed, I think I have taken up enough of your time, and in closing thought you might like to know that I read your "Amazing" and "Fantastic" magazines whenever I get the chance, and am quite satisfied if I find just one good story in each issue

Pvt. John R. Gregory
Military Secret
U. S. A.

Many thanks for this detailed corrective letter on the facts in the story. We are not too high-hat to take it when we deserve it—and we deserve it!—ED.

FROM NEW ZEALAND!

Sirs:

While "It's a Small World" in the March issue of AMAZING is not an uninteresting story, Mr. Bloch has made the same mistake that Ray Cummings has always made in his "Atom" stories—he has not taken into account the very obvious fact that, even though they were reduced in size, Clyde and Glen would lose none of their original weight; moreover, their strength and eating capacities would remain the same also. Thus Roger could not have lifted one of them, much less two, they would have broken the branches of the tree immediately with their weight, and they could have dealt very effectively with Roger, the cat, and even Simon, having their original strength, and, through their ability to concentrate it and their weight on one spot, being tremendously powerful; there are numerous other similar points that Mr. Bloch has evidently seen fit to ignore; I cannot imagine that he did not realize that he was including such glaring mistakes in his story. The only "reduction" stories that I can recollect in which these points *were* taken into consideration were "A World Unseen," "A Matter of Size," and "The Midget from the Island," which stories I expect only older fans will remember.

Virgil Finlay's artwork in this issue is utterly magnificent; I hope that you have plenty more on hand, for no other artist can compare with him, in my opinion.

Thomas G. L. Cockcroft
7 Roslyn Road,
Napier,
New Zealand.

Maybe, maybe—But can you prove it? Does a reduced molecule still weigh the same? Maybe an entirely different ratio of physical values exists in the molecular "worlds." ED.

MATURE—OCCASIONALLY!

Oversimplifying, AMAZING seems to favor the direct, action approach to science-fiction, rather than the intellectual method. Both systems are equally liable to fault: the AMAZING plan fizzles out superbly most of the time, producing great gobs of superficial bang-bang fiction. But when it clicks, it does so in a wonderfully smooth, mature fashion. The pleasure of the dazzling

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Reed sagas, the great Wilcoxes, Irwins, and Pattons . . . is long remembered, and keeps one a constant reader. That, and the prime selling points of a lavish art dep't—what a beautiful May space cover!—and Scientific Mysteries.

AS *can* be pretty good—in its mature moments.

Bill Stoy
140-92 Burden Crescent
Jamaica 2, New York

This sounds like a kick, and turns out to be a great big rose! Thanks!—ED.

STUPENDOUS!

Sirs:

Well, well, what do ya know! I finally found a story so good I just had to compliment it. Pertaining to the November issue, and "Empire of Jegga". It was stupendous. The best since "The Test Tube Girl."

The January issue was swell, too. Good cover. "Intruders from the Stars" rates first, "The Mad Robot" second, and "Phantom City of Luna" third. Keep up this good work and I will always be a devoted and faithful reader of your mag.

Arirl F. Bail
Coeur d'Alene, Idaho

We thought so too!—ED.

COMPREHENSIVE COMMENT

Sirs:

I have been reading your magazine since late 1933, and have just finished the March, 1944, issue. I have never before written, or had even the inclination to write to any great extent. I have reached the point that I think it's time to do some writing, or screaming, or something, and I would appreciate seeing this, or part of this, (particularly the next to last paragraph) in print.

I'll start in with some of the usual comments. I am, of course, ardently in favor of trimmed edges, but I've given up hope long ago of ever having them. I think your mag on the whole has not improved a great deal. I have, stored away, all the past copies. Every once in a while I dig them out and read them. It seems to me that, although the material may be a little old-fashioned in some, the plots are as good and more masterfully handled. Some of your changes I like—the series that have been on your back cover, and the clearing away of story names from the front cover as much as possible, and lately the publication of a longer Discussions column. Your articles on the whole have been good, and your artists also, with Paul and McCauley predominating. (Though Paul is at his best only on cover work.) Some other bests are Finlay and St. John. Not of the top rank, but good, are Fuqua, particularly with his machines, Hadden, and Malcolm Smith. The only illustrator of yours I dislike is Magarian. (Open to argument here.)

Now to the authors. There is no point in mentioning those I like, because most of your authors type out fair to very good stories. I have, however, a violent antipathy to Don Wilcox. His stories are childish conglomerations of disconnected words. His plots have been used hundreds

of times, and there is nothing novel in his presentation. I suppose that he did, at one time, write good stories, but after so much nothingness I don't remember any of them. You have no writers, so far as I'm concerned, that are capable of turning out really excellent stories. It seems to me that during the last seven years you have considerably lowered your estimate of the average intelligence of your readers, because certainly none of these highly praised modern writers come to that level of excellence set by the former masters. I think that E. E. Smith was probably the greatest. Weinbaum was good, excellent in fact. Williamson was one of the greatest. Campbell and van Vogt, Heinlein and Stuart—these were the greats. Only once in a great while does even a writer such as Eando Binder grace your pages now. It seems that the present writers have stopped even trying to reach the set goal.

Now for the business at hand. It seems that the story "Carbon Copy Killer" has come in for a lot of attention. Let me say that it was not as good as other stories in the issue. Of course it surpassed "The Great Brain Panic"—see above for comment on Wilcox. I liked "The Man Who Lost Face" best although it was not s.f. and should actually have been in your companion magazine.

Now for the January issue. According to you, "Intruders from the Stars" was raved about by everybody except Mr. Philip K. Dick. More power to him. The story actually made so little impression on me that I didn't remember it in the slightest only some month and a half later, and had to back and re-read it in part. In fact, I rate it fourth in the issue, bettered by "Phantom City of Luna," "Island of Eternal Storm," and "The Mad Robot," in that order. In the present (March) issue you presented one really *good* story—the best I've found in some time. That is "Crossed Wires" by Yerxa. "It's a Small World" was also excellent. In fact I think that this issue is one of, if not the, best in the past two years, with all stories very readable except—ugh—Wilcox's "Magnetic Miss Meteor." It has reached the point that I look at the contents page, and if Wilcox's name is there, well, so much of this issue wasted.

Next to Discussions. Pvt. Robert S. Sorenson lays into Mr. Lanefield a little heavily, I think, since Lanefield voiced no personal objection to the bare torso. If he has such an aversion, what will he think of this month's cover? (Which, by the way, is splendid!) Now let me express a few thoughts. Of all the pewling, pusilanimous, banal, puerile, and to quote Pvt. Sorenson, "utterly sickening, completely juvenile expression of opinion" the letter by Mr. Jos. G. Serene is the worst I have ever read. He says, quote, "just cut out—tobacco, booze, and swearing and you will have 100% stories." 100% for whom? The first grade Sunday School? Over 75% of the people of the United States smoke. Over 60% of them drink, in moderation or otherwise. Only ministers don't swear, and on occasion I've heard even

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them do it. If Mr. Serene (Mr. Jos G. Serene, mind you) dislikes these things so much, why doesn't he go some place away from this country where those things are not done? (If there is any such place, which I doubt, and if there isn't, why then I guess that Mr. Serene must get used to these things.) If the story is going to portray humanity, and particularly Americans, as they really exist, how can it keep from having them do all of the three? Three quarters of the characters, as statistics show, ought to smoke, and if in the story there is time, then I see that one of them out of every two would accept a highball! Without them the characters, in some situations at least, would appear stilted and unreal. For example, if the ship of an old space-dog was about to be boarded by space pirates, do you suppose that he would say, in a mild voice, "Oh, for gracious sakes!" Mr. Serene might think so, but an overwhelming majority of your readers *don't* thing so. There should be no objection to the portrayal of characters as they should be to fit the position in which they are placed. Does he suppose that all people are as he? The likable ruffians, or maybe I shouldn't call them that, that seem to be the heroes of a great many stories of the present day, witness in the present issue Hank in *Journey in Time to Cleopatra* and Cokie in *Cokie Goes Treasure Hunting*. Don't misunderstand me, I enjoy these stories immensely—and not from any desire to see the human race pictured as going to the dogs; but Mr. Serene, after reading them, probably threw up his hands in righteous (?) horror, and started foaming at the mouth! The hypocritical idiocy of the idea! However, each man has his own opinion. As did Pvt. Sorensen, I apologize if Mr. Serene is under nine—at any age above that there can be no excuse for those ideas!

To sum this over-long thing up, I think that there is room for improvement in A. S., but that on the whole it is still an interesting, entertaining magazine well worth more than the 25c it cost. Keep up the effort, and I wish you all the luck in the world.

G. S. Bruton, II
1 Louisiana Circle
Sewanee, Tennessee

When a letter covers the situation as well as this, why should we stick our oar in?—Ed.

ABOUT SPACE TRAVEL

Sirs:

Sometimes I wonder if you editors can even read. Judging from the stories in your mag, you read a little over half of them an then throw in the rest and hope they'll be O. K. Some of your stories I read in your mags make me wish I'd never set eyes on them, but the majority of them make up for the one or two stinkers in each issue, so I'm still a fan of yours.

Another thing makes me wonder about your literacy. The last time I wrote, I used the letterhead of my place of business and your printed a

combination of that and my signature for my name. Do you always leave your writer's names "anonymous" or was it another typographical error?

Arthur Z. Brown in the May issue has a few good ideas about space travel, but slightly erroneous I believe. Fr. inst., "the distance traveled through air would be negligible, say 500 miles at each end against the millions of miles traveled through space utterly devoid of air. Thus a ship that was square, round, hexagonal, or any other shape would do equally as well."

I wonder if young Mr. Brown has ever seen a meteor hit the earth's atmosphere. It becomes white hot and incandescent almost immediately and the huge percentage of meteors are completely burned up before reaching the ground. Thus, though the distance traveled by a space ship in air would be negligible, as Mr. Brown says, I think it matters quite a lot that air resistance be reduced as much as possible.

Also the matter of radiant energy exerting pressure. Sure, it's a well-known fact. In fact, it once was proposed that a space ship would travel with huge collapsible wings to catch the sun's radiation and use the pressure for its motive power. At that, though, I don't think radiant energy would exert enough pressure to stop or even hinder greatly a ship with sufficient speed.

An energy beam also is a good idea, although rather vague. What kind of energy was meant; heat, light, electric, atomic (?) or what have you? And at the tremendous distances involved, the beam would tend to fan out and dissipate its energy unless a receiver of some sort were built in the ship to attract or "focus" it.

The problems so far appearing seem very difficult not to mention innumerable others, such as the effect gravitation from other bodies would have on a moving object in space.

Yes, indeed, space navigation is every much more complex than simple navigation such as we are used to, but I have no doubt that in the future, years distant, of course but not too far, space travel will appear and become fairly common.

Scott Crom
201 2nd Street
Red Oak, Iowa

Any other readers have anything to say on this subject?—Ed.

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SUPER TRAIN of TOMORROW

By HENRY GADE

This month's back cover depicts artist James B. Settles' conception of the train of tomorrow, which will become a life-saver to the railroads, facing competition in the air.

MODERN war has made it necessary to build aircraft of huge proportions capable of carrying freight in great quantities. So successful has this been accomplished that post-war prospects for aerial cargo carriers, to say nothing of passenger carriers, is very great. It has been variously estimated that huge air transports will be able to carry twice the capacity of America's railroads at many times the speed.

Naturally, this prospect has been one which the railroads have not failed to recognize. It has been viewed with realization of its certainty, and the logical conclusion has been reached—that in order to stay in business, the railroad will have to carry as much as far and as fast as the airlines can do it. To accomplish this end, the ingenuity of science must come into play.

Many new designs have been offered, many new mechanical devices. All have been on revolutionary trends, pointing toward great size and tremendous speed.

On our back cover this month we present the type of train artist James B. Settles conceives as a possibility to offer competition to the airlines.

First, he has pictured the train as being mounted on a single rail of huge dimensions and strength. Such a foundation would be necessary to maintain the great weight of the super train, and also to provide a firm roadbed that would be sufficient to provide the margin of safety required.

This train, riding a single rail, obviously requires a balance power, in this case the obvious one of a gyro wheel. The same principle would be called into play that is used to steady giant ocean liners. The cars of this train would contain gyroscope wheels which would be capable of holding it erect against almost any force.

Each car would be articulated, so that to all intents and purposes the whole train would be one single unit.

Motive power would be furnished both by great diesel motors, and by auxiliary rocket compressors mounted on the sides and geared to great pistons operating almost exactly like the steam train's pistons. These rockets would come into play at the higher speeds, after the gear mechanism of the diesels cuts out. Thus high speeds could be achieved which would be impracticable by any gear arrangement. Wearing parts would thus be reduced to a minimum, and breakdowns from this source would be virtually eliminated.

Track construction and right of way would be on a one-way basis, without switches except in key switching points. There would be no such thing as a siding, and no such thing as a "fast" train or a "slow" freight. All shipments would proceed on a definitely timed basis estimated to the split second on a safety margin for the terrain, whether plain or mountain. Thus, there would be a single speed (and time-table) for all trains going to fixed destinations. If it is possible to travel from Chicago to San Diego in thirteen hours, then that would be the speed both for freight and for passenger. There would be no necessity for the freight to be sidetracked to allow the passenger flyer to go through, or as in the case of war-time, the other way around.

Gyro wheels and motors and storage space would be around the "hub" of a central axis running through the length of the car. Around this area would be the passenger quarters, arranged on the outside of the circumference of the car, which itself would be cylindrical in shape.

These quarters would be arranged into three separate "decks" connected by escalators. The top deck would be diner and observation deck, the central deck pullman, and the third or lower deck coach service.

All of these decks would be absolutely soundproofed, and there would be no noise to indicate that the train is moving. Each deck would be suspended from an overhead axle so that all turns would be made without disturbing the center of equilibrium. This would eliminate any tendency to fall when the train was rounding a curve. The train itself would remain erect by reason of its gyro controls, making "banked" roadbeds therefore impossible since the cars would not bank to conform to such variations in the roadbed. However, since elimination of grades would be impossible, the gyro wheels would be free to tilt forward or backward to a sufficient degree to compensate for the maximum grade on the system.

The engineer's cabin would be similar to the bridge of a ship, and would be located at the top and forepart of the lead car. His controls would be radio guided and would require little in the way of personal manipulation. His function would be mainly to keep constant check on all readings and to guard against equipment failure and to bring into play emergency devices in case of such failure. Such is tomorrow's super train.

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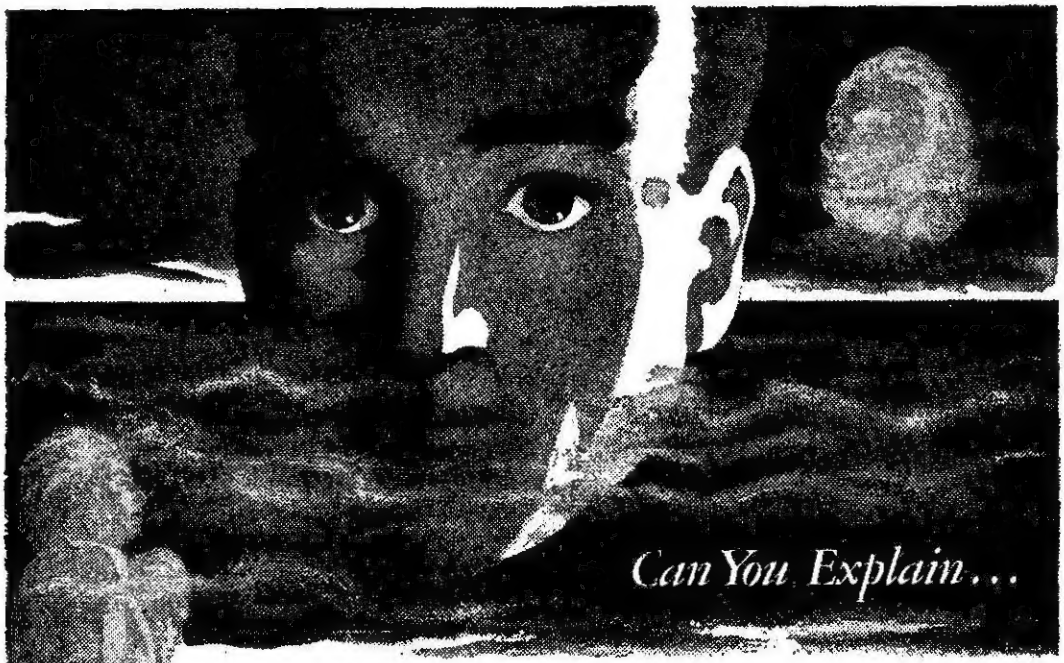

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